UK Military Mental Health Research: An Overview

King's Centre for Military Health Research ,
King's College London

Academic Centre for Defence Mental Health

Surg Cdr Neil Greenberg

KCMHR
THE KING'S CENTRE FOR MILITARY HEALTH RESEARCH

ACDMH
ACADEMIC CENTRE FOR DEFENCE MENTAL HEALTH

Who am I?

- Neil Greenberg
- In the RN for ~19.5 years
- Served on ships, submarines and with the RMC
- Currently the uniformed lead for MH research
- Based at ACDMH in London

Eric Feferbe

Who are ACDMH?

Core Team

- **Prof Simon Wessely (Director)**
- **Dr Nicola Fear (Senior Lecturer)**
- **Surg Cdr Neil Greenberg (Senior Lecturer)**
- **Major Norman Jones (Research Fellow)**
- **Susie Burdett (Administrator)**

Research Associates

- **Josefin Sundin**
- **Dr Kathleen Mulligan**
- **Helen Alvarez**

The presentation

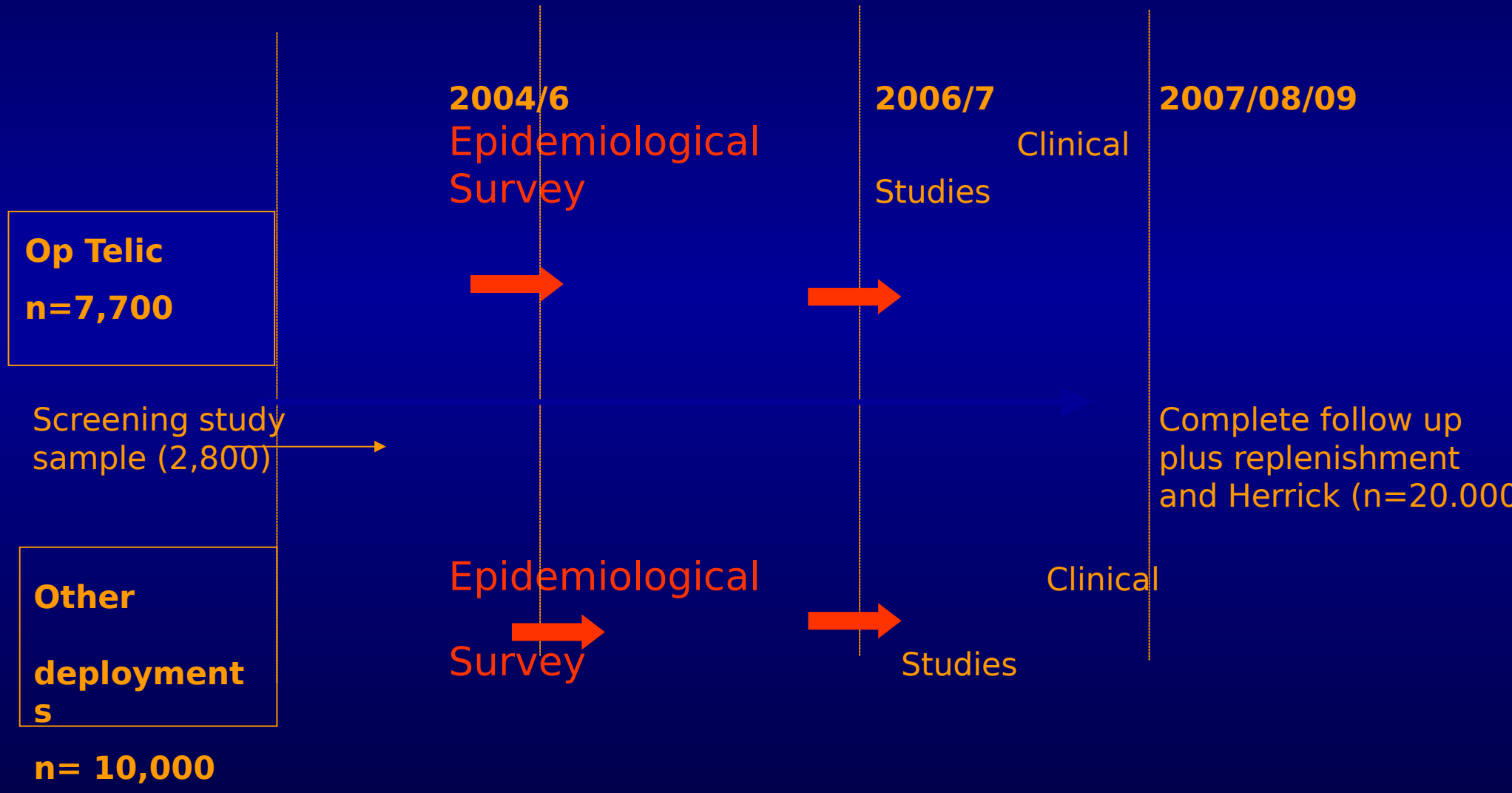
- Where UK Mil MH research came from
- Our Telic data including regulars and reserve forces
- UK approaches to mental health briefings
- TRiM
- Decompression
- Risk taking and alcohol
- Questions

The King’s military cohort

- King’s College London
- MOD funded
- Longitudinal
- Random sample of UK Armed Forces

King's Military Health Cohort
Time Plan

Stages 1 and 2



Whom did we study?

- Case definition: TELIC 1 (War fighting period) versus everybody else
- Tri service (proportional to TELIC Order of Battle)
- Serving and non serving excl SF
- 2:1 over sample Reservists
- DU measurement study (n= 368)
- Extra sample of civilians
- Response rate ~ 60%

Unexplained medical problems among war veterans may be inevitable—but this time, the military says it's much better prepared

Bracing for Gulf War Syndrome II

Long before U.S. and British troops swept into Iraq last week, military doctors and epidemiologists were planning for the war's aftermath. They are anticipating a repeat of Gulf War syndrome, the vexing series of unexplained medical problems that affected tens of thousands of veterans after the 1991 war. This time, they say they are much better prepared to prevent, recognize, and treat such problems than they were 12 years ago.

In the Iraqi desert, continuous environmental monitoring and improved record-tary leaders that accepts that the panoply of medical problems is real—indeed, likely to occur after every major deployment—and that science cannot pinpoint the causes. Acknowledging the problems and addressing them early on, instead of shuffling veterans through the medical system in a fruitless search for answers, may in itself prevent a "snowball" effect of illness, worries, and suspicions, says Charles Engel, an influential Gulf War researcher and clinician at Walter Reed Army Medical Center in Washington, D.C.

clusively linked to any of the medical complaints, which include fatigue, muscle and joint pains, asthma, dizziness, and rashes, as well as memory, attention, and concentration problems (*Science*, 2 February 2001, p. 812).

Most researchers today are pessimistic that clear links will ever emerge. Almost all the symptoms also occur in the population at large—although at lower levels—where they are just as difficult to understand. And similar, baffling complexes of symptoms have appeared after almost every major war, suggesting a more general cause, such as the stress and horror of warfare. "These things are part and parcel of going to war," says Simon Wessely of the Gulf War Illness Research Unit at Guy's, King's and St Thomas' Hospital in London. "It would be naive to think you can prevent them completely."

But Wessely thinks they can be moderated —which is exactly what U.S. and British forces are trying to do. The strategy includes avoiding real hazards and collecting better data. This time, for instance, special environmental teams are traveling along with the troops to take air, water, and soil samples and test them for a range of contaminants, Kilpatrick says. Each unit's geographical position during the course of the war is being recorded, which should further help tease out potential exposures. Medical record-keeping is automated and is as accurate and complete as possible—a far cry

Science, March 28th 2003

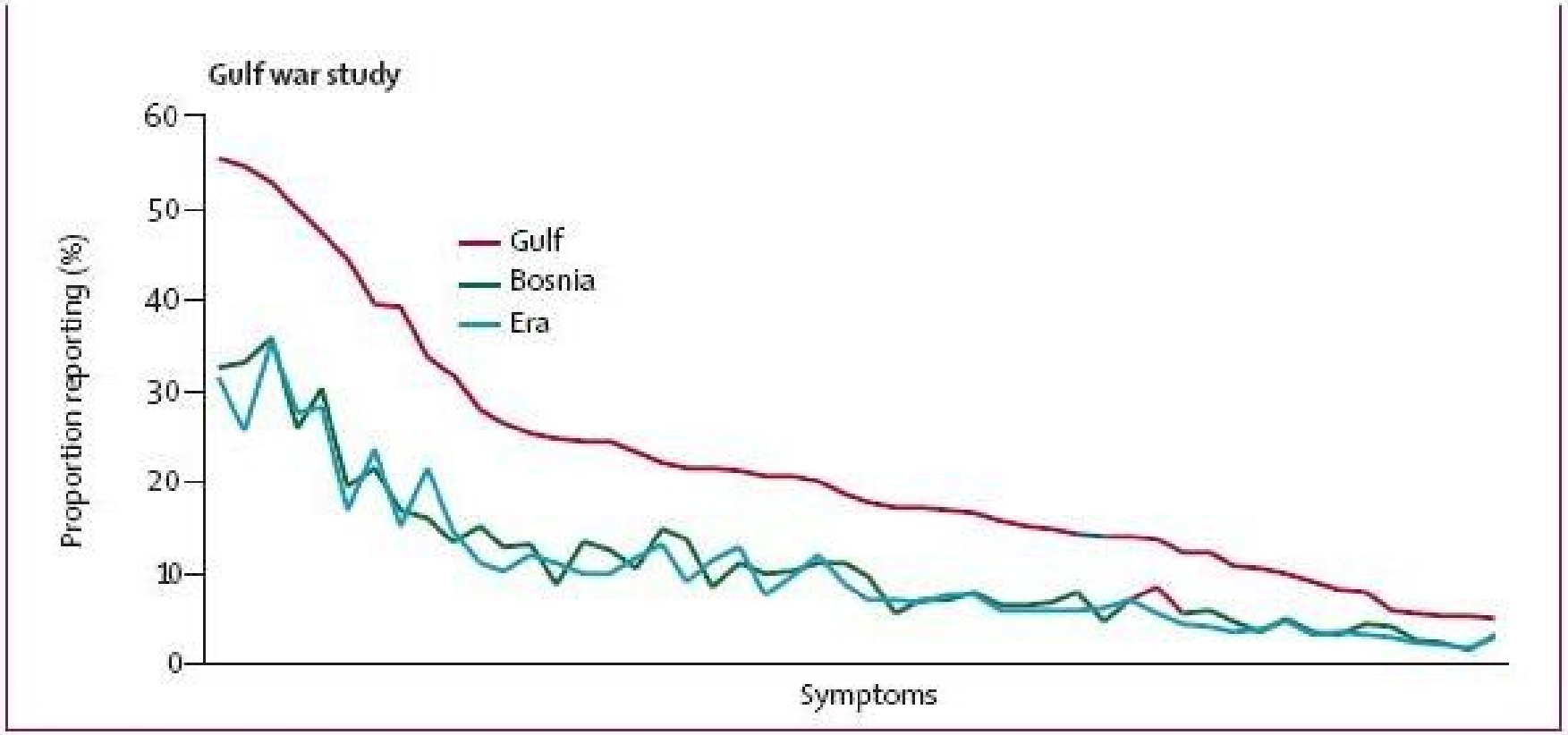


Figure: Frequencies of symptoms

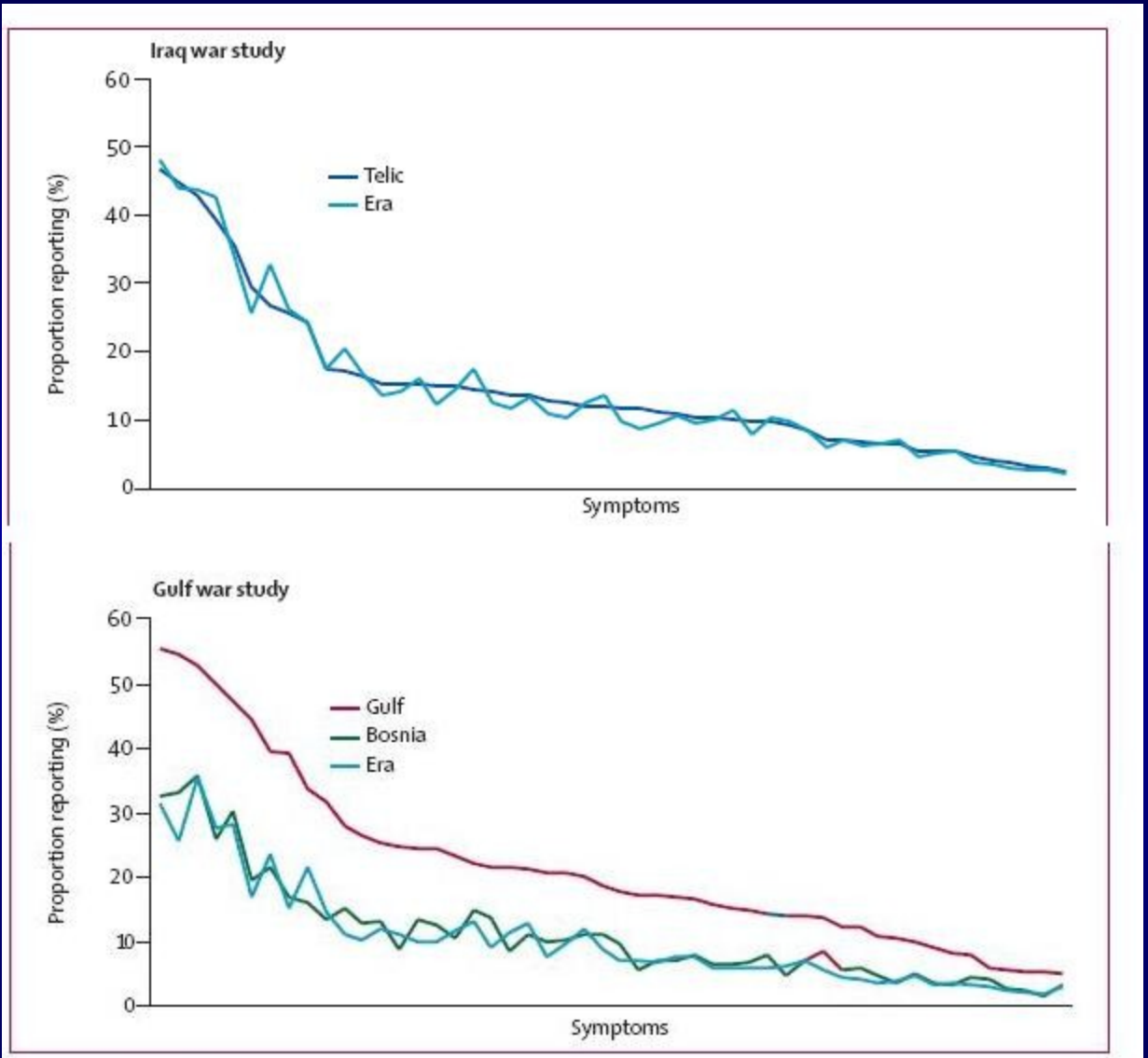


Figure: Frequencies of symptoms

“Hot Button” topics

- PTSD
- Reservists mental health
- Treatment seeking/stigma
- “over stretch”
- mTBI

For whom the battle still rages

Post-traumatic stress disorder can strike immediately or decades after a soldier has left the combat zone. The Iraqi conflict will certainly bring many new victims but there is little help at hand

By Decca Aitkenhead

THE GARDENS of Tyrwhitt House are velvety soft and emerald green in the sunshine. Men amble alone across the lawns, and gather on shaded benches, sipping tea and talking quietly. From a distance, they could be hotel guests, except that a number are wearing pyjamas. They are shy at first, edgy, with a nervy anger twitching in their fingers and, as they talk, it becomes clear that something is very wrong for all of them.

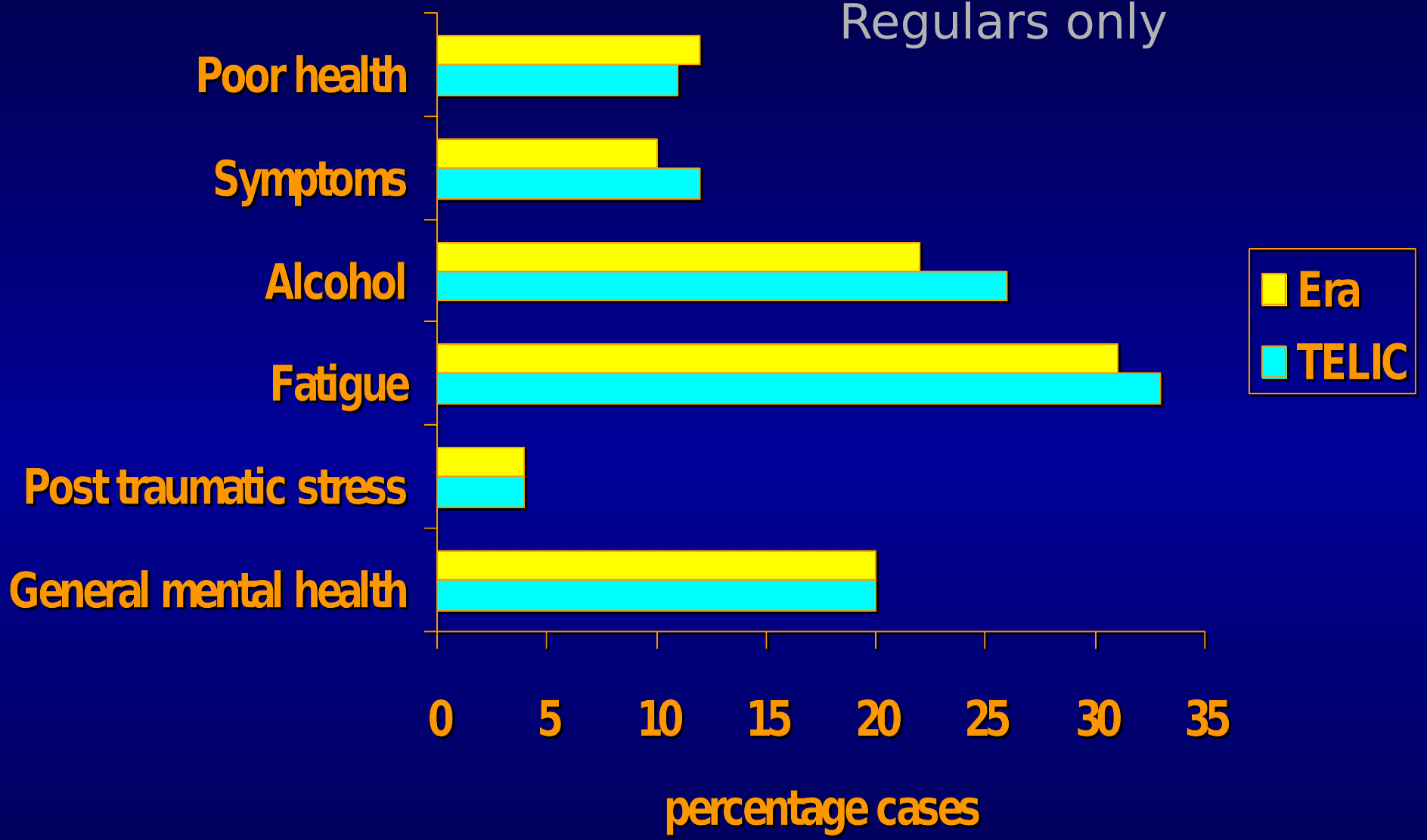
Tyrwhitt House is a residential treatment centre in Surrey for ex-servicemen and women suffering from post-traumatic stress disorder (PTSD).

shakes. All fought on the winning si
and most display pride in their servi
by the very way they move. But th
are no use to the Army any more; this
where some of the men who've bee
fighting in the most recent conflict
the Gulf will inevitably end up.

Rupert Williams fought in the 19
Gulf war. Just 30, he arrived for the fir
time last week and is sitting alone on t
grass, his body lifeless but stiff. H
signed up at 16 for the usual reasons –
broken home and a suggestion from th
careers office – and at 17 was sent to Ge
many. His was a violent battalion. Boy

PRIMARY MENTAL HEALTH OUTCOMES (REGULARS ONLY)

	Era*	TELIC 1*	Unadjusted OR (95% CI)	Adjusted OR (95% CI)‡
Common mental disorder (GHQ-12)	1071/5481 (20%)	953/4631 (20%)	1·02 (0·92–1·12)	1·03 (0·92–1·15)
PTSD (PCL-C)	193/5456 (4%)	201/4613 (4%)	1·18 (0·96–1·45)	1·20 (0·95–1·50)
Case on AUDIT	1159/5485 (22%)	1183/4637 (26%)	1·28 (1·17–1·41)	1·10 (0·99–1·22)



Hotopf et al. Lancet 2006: 367: 1731-1741

Combat duty associated with PTSD and alcohol use

	Combat*	Non-combat*	OR (95% CI)	Adjusted OR† (95% CI)
Common mental disorder (GHQ-12)	244/1242 (20%)	539/3129 (19%)	1·05 (0·89–1·23)	1·04 (0·86–1·25)
PTSD (PCL-C)	70/1238 (6%)	97/3125 (3%)	1·87 (1·37–2·56)	1·49 (1·05–2·13)
Fatigue case	414/1236 (34%)	979/3122 (31%)	1·10 (0·96–1·27)	1·05 (0·90–1·23)
Multiple physical symptoms	155/1273 (12%)	359/3152 (11%)	1·08 (0·88–1·32)	1·10 (0·88–1·38)
Case on AUDIT	413/1244 (33%)	770/3128 (25%)	1·52 (1·32–1·76)	1·19 (1·01–1·41)
Fair or poor on general health	132/1259 (11%)	337/3133 (11%)	0·97 (0·79–1·20)	1·05 (0·82–1·33)

*Data are number/n (%). †Adjusted for age, sex, rank, educational and marital status, service branch, and fitness to deploy.

Table 10: **Effect of combat on health (regulars in Iraq war group only)**

Hotopf et al. Lancet 2006: 367: 1731-1741

BBC NEWS UK EDITION

Last Updated: Tuesday, 10 May, 2005, 04:20 GMT 05:20 UK

E-mail this to a friend Printable version

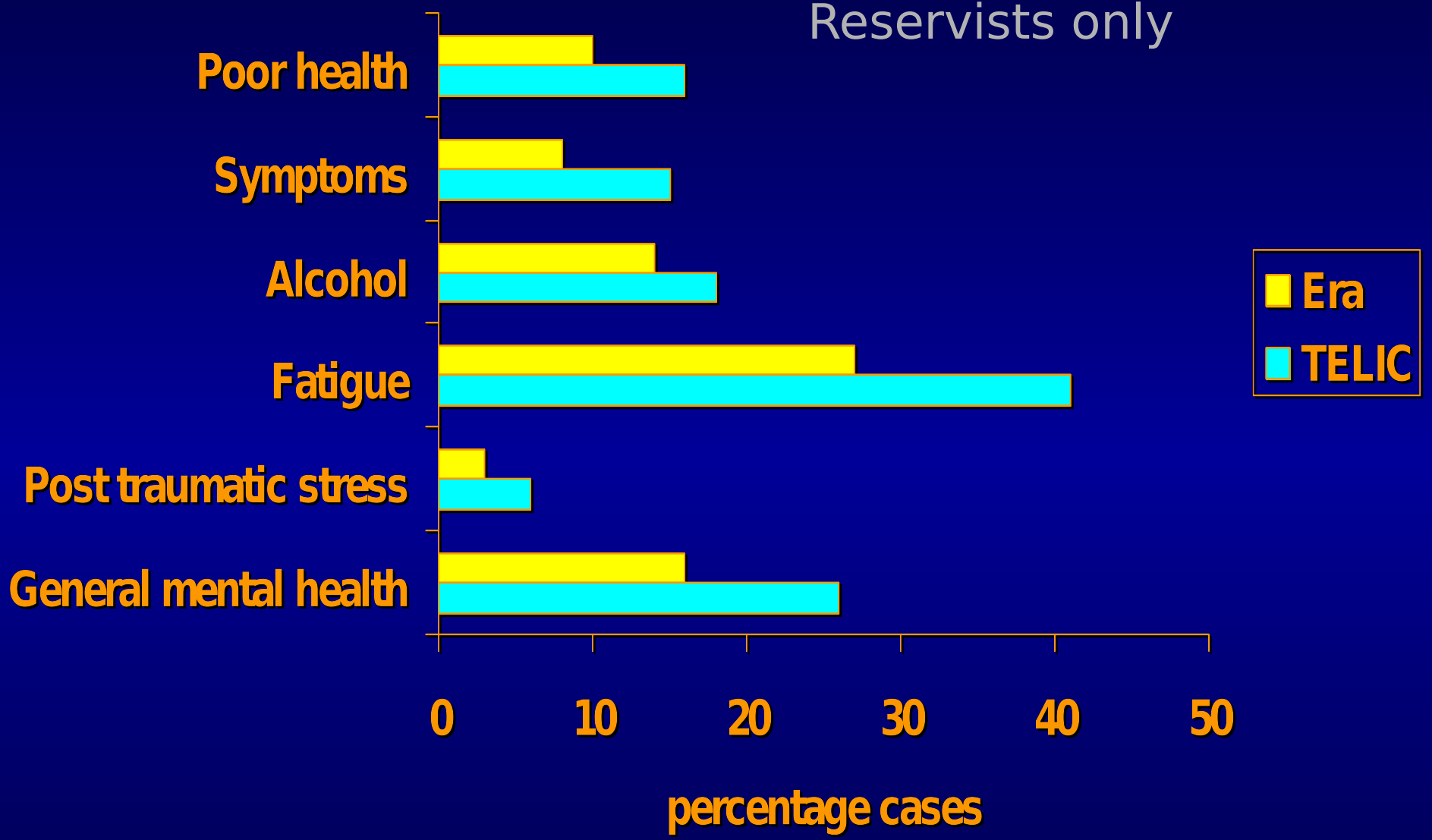
Iraq reservists 'need more help'

Half of all Iraq war veterans seeking help for mental illness are Territorial Army soldiers, despite making up only 10% of deployments, a charity says.

Combat Stress blamed a rise in those seeking help partly on a shortage of NHS skills and a lack of MoD support.

Reserve forces make up 10% of British deployments to Iraq

Some 25 reservists currently account for 50% of its referrals, it says.



Hotopf et al. Lancet 2006: 367: 1731-1741

Compared to Regulars, Reservists reported …

- Less previous deployment experience
- More traumatic exposures (and its not just the medics)
- More traumatic stress symptoms
- Lower unit cohesion (slight)
- More problems adjusting to homecoming
- More likely to consider divorce

Telegraph.co.uk

Hundreds of soldiers suffer brain injury

By Thomas Harding, Defence Correspondent
Last Updated: 2:27am GMT 17/01/2008

More than 500 soldiers are likely to be suffering a form of brain injury as a result of exposure to bomb blasts, the Ministry of Defence has reported.

- Frontline: our troops in Iraq and Afghanistan

A major study into the effects of "mild traumatic brain injury" carried out by the military has concluded that a number of troops who deploy operations may suffer serious side-effects from explosions.

The effect of the injury can lead to stress, sleeplessness, memory loss and depression and can lead to difficulties for soldiers reuniting with their families after operations.

MTBI can result from relatively minor head injuries or exposure to blast but can also arise from sports injuries such as bang to the head on the rugby field.

American medics are leading the research in into the injury and the US Army believes up to 20 per cent of its troops might have been effected as a result of the numerous roadside bomb blasts experienced in Iraq.

So far the MoD has found just 0.5 per cent of 36,000 troops on operation in Iraq and Afghanistan has been affected.

Marker of Post Concussional Syndrome (not “TBI”!)

TELIC Symptom (from initial cohort)
Headache
Dizziness
Irritability or outbursts of anger
Double vision
Ringing in the ears
Loss of concentration
Forgetfulness

In-theatre exposures

- **PCS symptoms and symptom severity associated with:**
  - **Blast exposure**

In-theatre exposures

- **PCS symptoms and symptom severity associated with:**
  - **Blast exposure**
  - **Aiding the wounded**
  - **Exposure to depleted uranium**

So what do PCS symptoms indicate?

	PTSD case **(n=246, 4.1%)**	
	n (%)	Adjusted OR (95% CI)
PCS symptoms		
None	**6 (0.4)**	**1.00**
1-2 symptoms	**32 (1.5)**	**4.18 (1.73-10.09)**
3+ symptoms	**208 (12.3)**	**39.40 (17.39-89.30)**

Symptoms of post-concussional syndrome are non-specifically related to mild traumatic brain injury in UK Armed Forces personnel on return from deployment in Iraq: an analysis of self-reported data

N. T. Fear[1*], E. Jones[2], M. Groom[3], N. Greenberg[1], L. Hull[2], T. J. Hodgetts[4] and S. Wessely[2]

[1] *Academic Centre for Defence Mental Health, King's College London, London, UK*

[2] *King's Centre for Military Health Research, King's College London, London, UK*

[3] *Defence Medical Services, Ministry of Defence, London, UK*

[4] *Royal College of Defence Medicine, Ministry of Defence, Birmingham, UK*

Conclusions. PCS symptoms are common and some are related to exposures such as blast injury. However, this association is not specific, and the same symptom complex is also related to numerous other risk factors and exposures. Post-deployment screening for PCS and/or mTBI in the absence of contemporaneous recording of exposure is likely to be fraught with hazards.

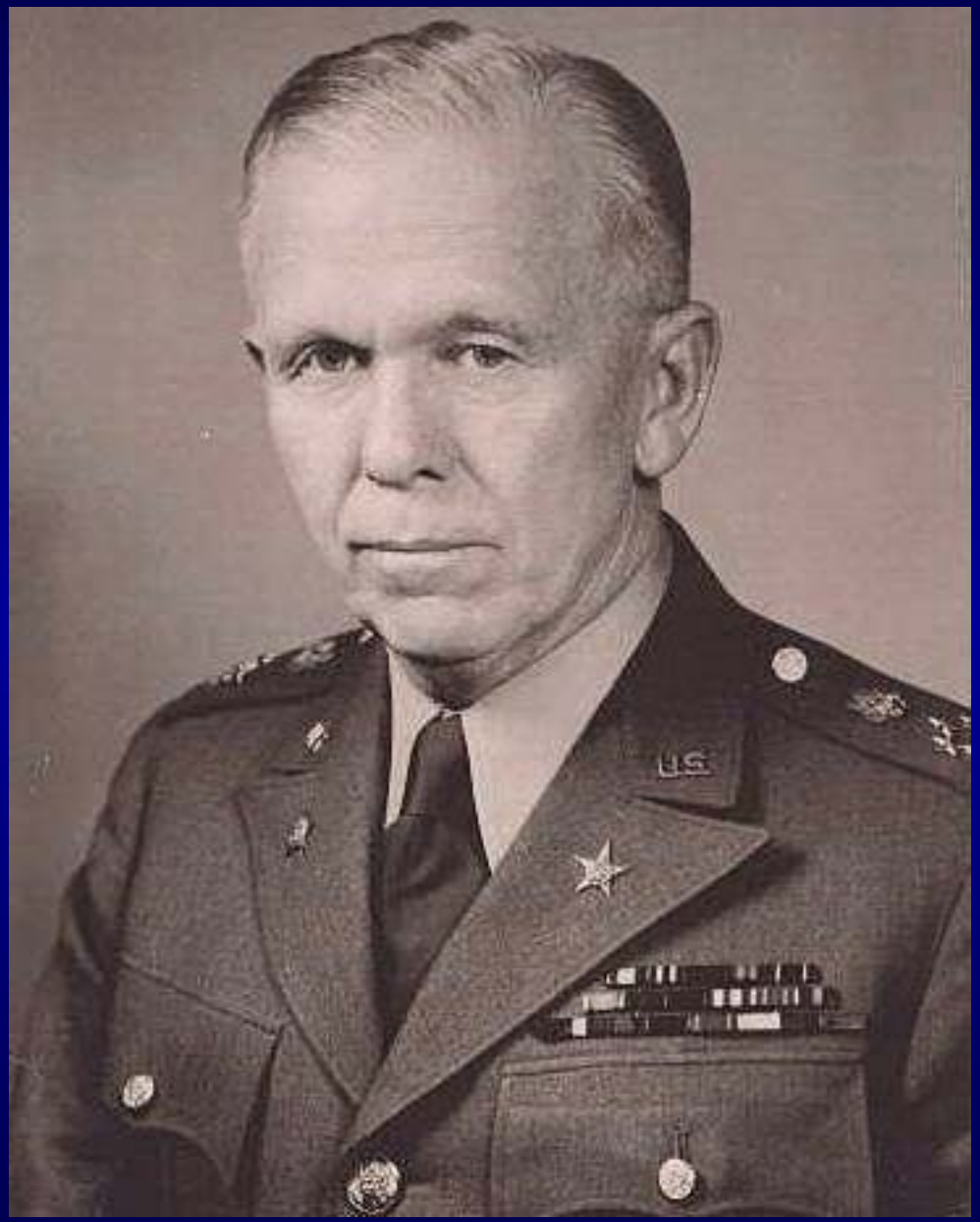
Received 10 April 2008; Revised 10 July 2008; Accepted 5 September 2008

The prevention of Operational Stress Injuries

Screening
Pre Deployment Briefings
Post Deployment Briefings
TRiM
Battlemind

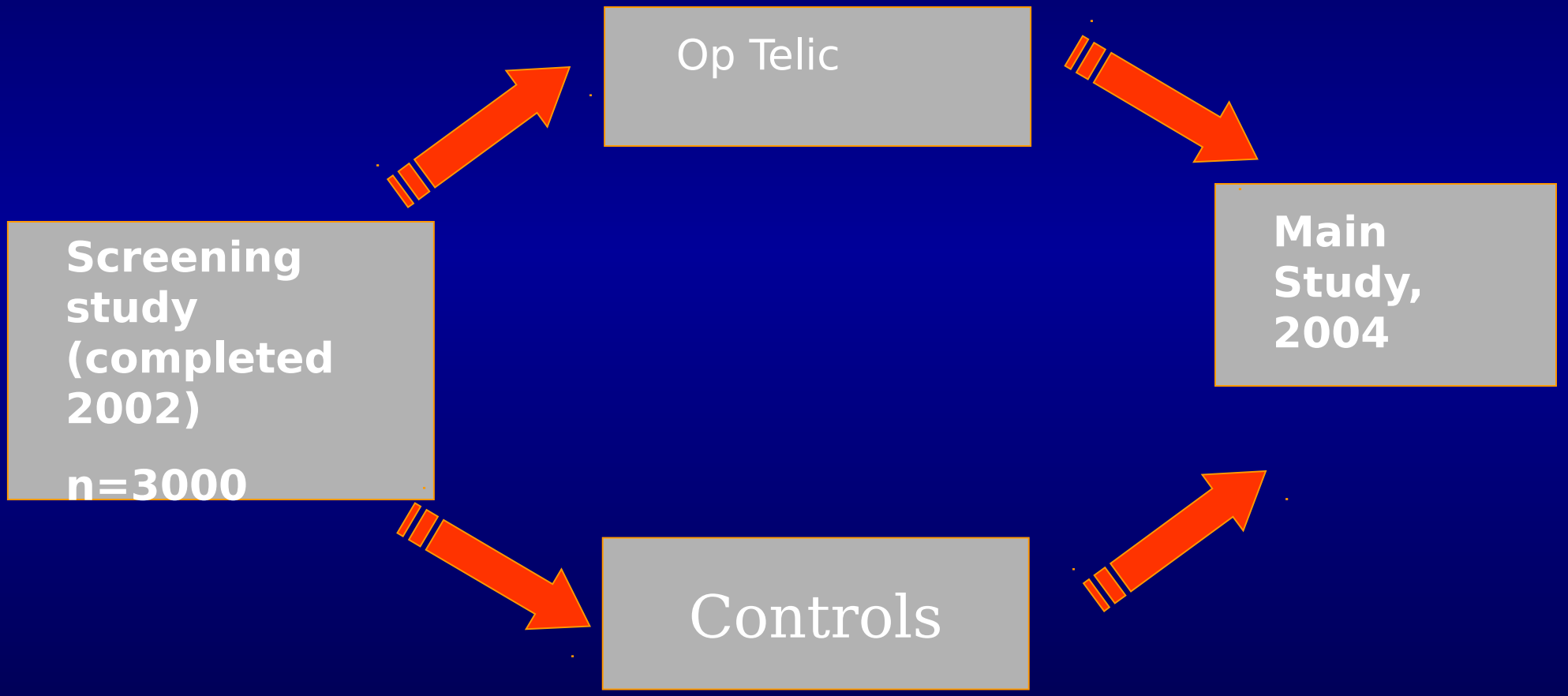
What could you do to prevent it?

- **Screening?**
- **Pre Deployment Briefings?**
- **Post Deployment Briefings?**
- **Peer group support (“TRIM”) ?**
- **Decompression?**
- **Battlemind?**



Screening Study

Before and After



Pre Deployment Screening Does not work

		Main Study		
		+	-	Total
Screening Study	+	6	27	33
	-	41	1540	1581
	Total	47	1567	1614

PPV 18% (5-31%); NPV 97% (96-98%)

Rona et al, BMJ 2006

UK view on screening

- Not part of our policy
- Prevalence rates too low, not popular
- The PWOT is primarily a chain of command (CoC) responsibility
- POSM – check at 3/12 by CoC

What could you do to prevent it?

- Screening?
- **Pre Deployment Briefings?**
- Post deployment Briefings?
- Peer group support (“TRIM”)?
- Decompression?
- Battlemind?

Pre-Deployment Stress Briefings Do Not Work

- Attended a SB (n=279), Did not attend (n= 456)

(TELIC 1 RN & RM regular personnel who are in King's study)

	OR (95% CI)
Reported sick during Telic 1	**1.34 (0.93-1.93)**
Aero-medically evacuated	**0.90 (0.25-3.26)**
Fair or poor general health	**1.05 (0.65-1.70)**
PTSD symptoms (PCL-C)	**0.68 (0.26-1.80)**
AUDIT case	**0.90 (0.64-1.27)**

Sharpley JG, Fear NT, Greenberg N, Jones M, Wessely S. Pre-deployment stress briefing: does it have an effect? Occup Med (Lond). 2008 Jan;58(1):30-4.

Pre-Briefings OMHNE study 2009

- Carried out in theatre ~US MHAT visits
- Jan-Feb 2009, ~600 personnel
- Units which did not receive a pre-deployment briefing had poorer mental health, even after controlling for leadership (OR=3.1, 1.2-7.4)

What could you do to prevent it?

- Screening?
- Pre Deployment Briefings?

- **Post Deployment Briefings?**

- Peer group support (“TRIM”) ?
- Decompression?
- Battlemind?

MILITARY RISK FACTORS FOR PTSD

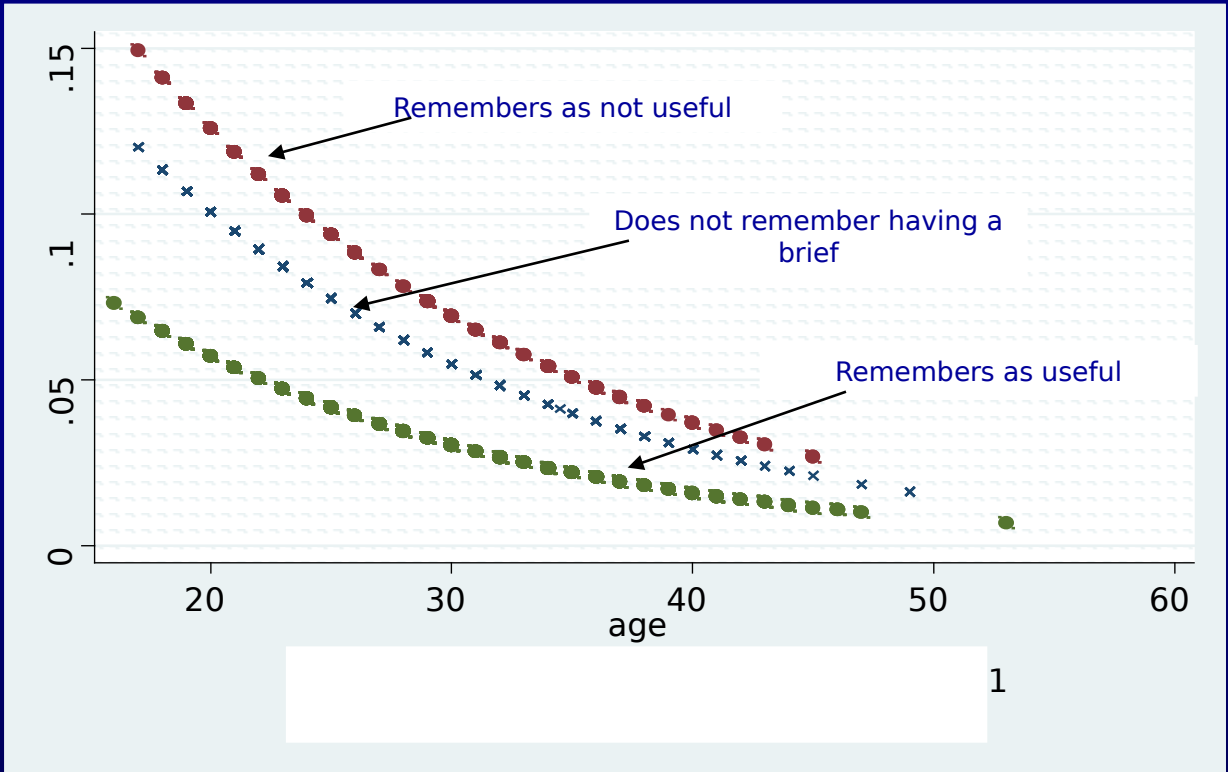
Post Deployment Briefings might work

- Thought might be killed (3.5)
- Morale (3.5)
- Time spent in forward area (2.7)
- Being in the reserves (2.0)
- **Not receiving homecoming brief (1.6)**
- Work in theatre did not match trade or experience (1.6)
- Being deployed for <13 months in last 3 years (1.3)

Iversen AC, Fear NT, Ehlers A, Hacker Hughes J, Hull L, Earnshaw M, Greenberg N, Rona R, Wessely S, Hotopf M. Risk factors for post-traumatic stress disorder among UK Armed Forces personnel. Psychol Med. 2008 Jan 29:1-12

It’s not what you do but…..

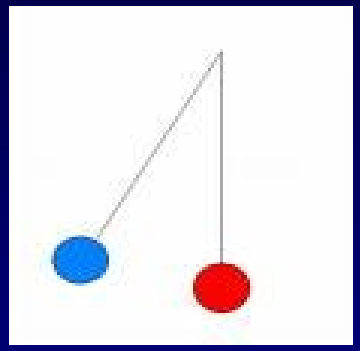
Stress Education and PCL score



Greenberg, Langston, Jones, Fear, Wessely – Occ Med 2008. In Press

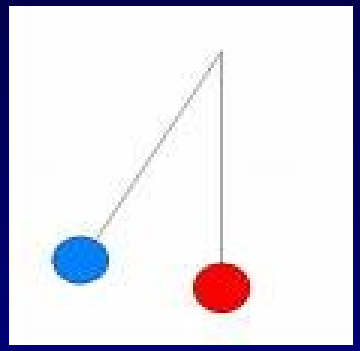
UK post deployment standard briefs

- Normalise reactions (reassure)
- How to help yourself (educate)
- Where to seek help (signpost)
- Homecoming experiences (Padre)
- Risky Driving



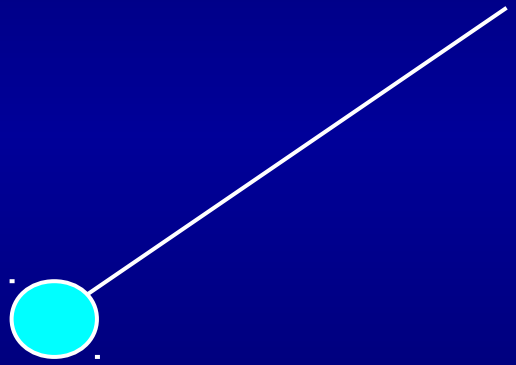
What's Normal

- There's no "normal"
- Reactions vary
  - Between people
  - Over time
- Most settle in four to six weeks



What’s Normal (2)

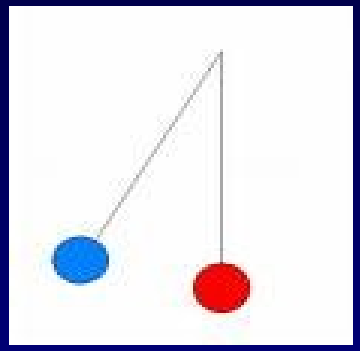
The emotional pendulum



Relief

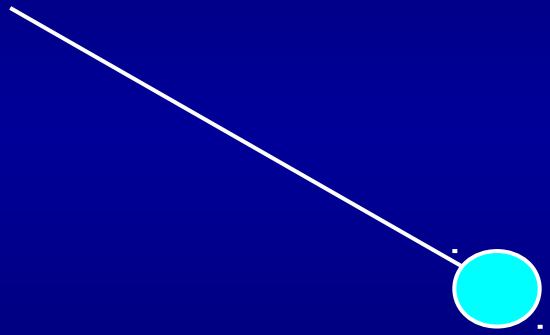
Happiness

Energetic



What's Normal (2)

The emotional pendulum



Extreme Sadness

Anxious

Irritable & Angry

What could you do to prevent it?

- Pre deployment screening?
- Pre or post deployment psycho-education?
- Post deployment psycho-education?
- **Peer group support ("TRIM")?**
- Decompression
- Battlemind?

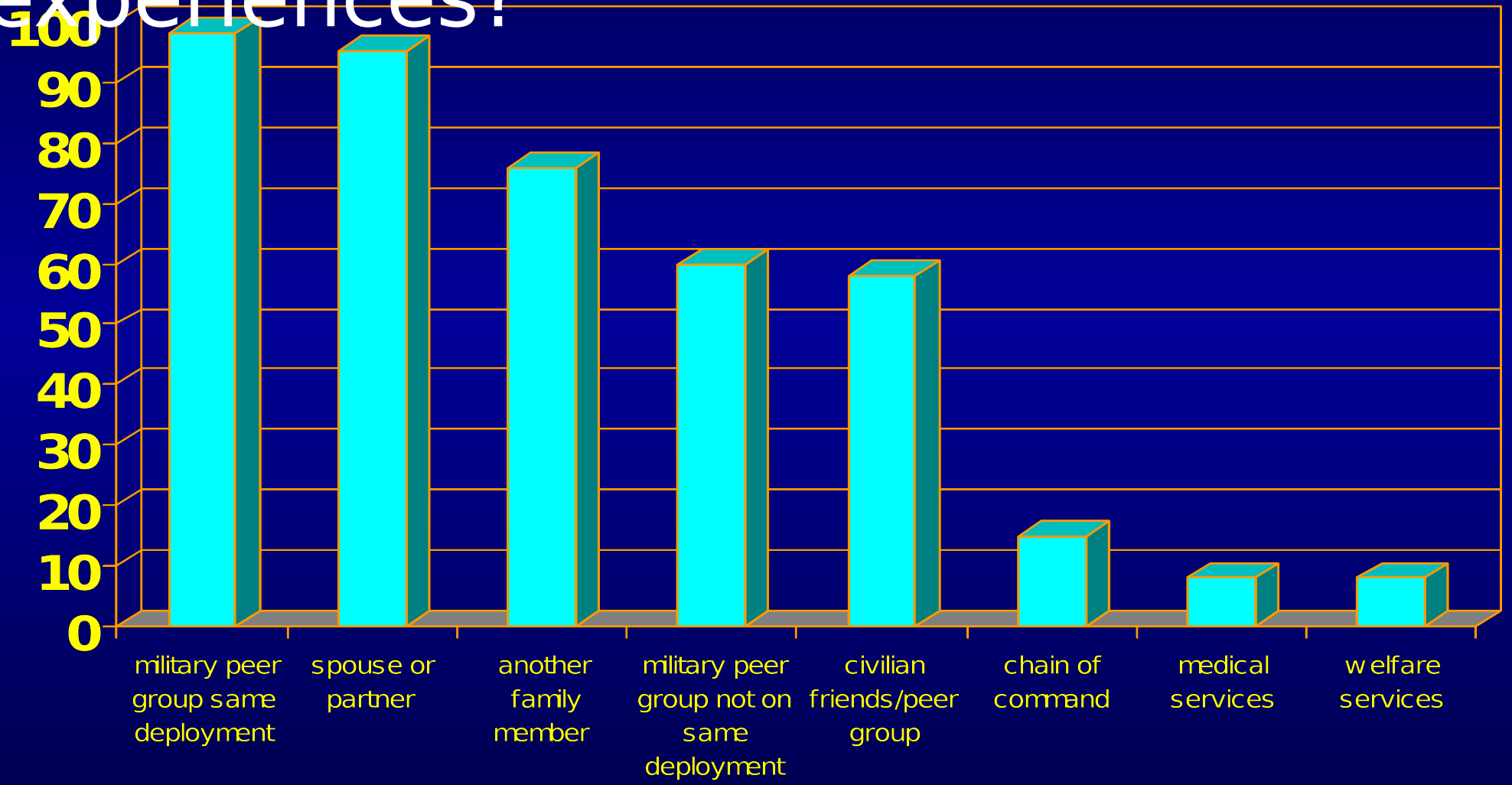
CINCFLEET TRIM PROGRAMME

Royal Naval Graphics Centre 2 (108/02)

Trauma Risk Management (TRiM)- What is it?

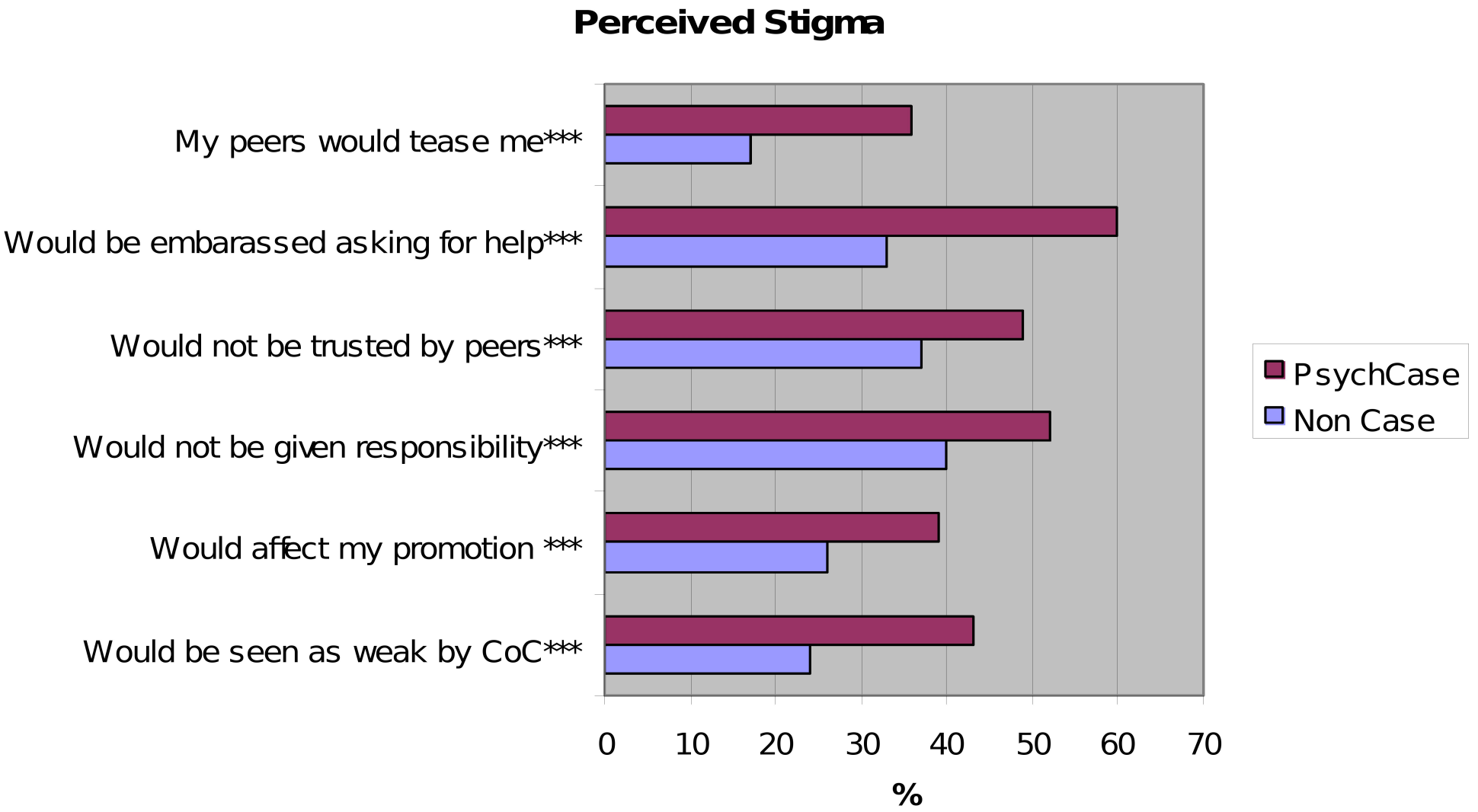
- Peer group support/risk assessment strategy
- ‘Human resource’ initiative (N1/G1/J1)
- TRiM does not aim to be a cure - assesses & manages need
- Trained practitioners from all ranks – MH supports*
- Set up within the Royal Marines 9 years ago
- Now Tri-Service

Peacekeepers & talking about experiences?



Greenberg, N. Thomas, S. Iversen, A. Unwin, C. Hull, L Wessely, S. Do military peacekeepers want to talk about their experiences? Perceived psychological support of UK military peacekeepers on return from deployment. J Ment Health (2003) 12, 6,

Stigma – RN/RM


Perceived Stigma
My peers would tease me***
Would be embarassed asking for help***
Would not be trusted by peers***
Would not be given responsibility***
Would affect my promotion ***
Would be seen as weak by CoC***
0
10
20
30
40
50
60
70
%
PsychCase
Non Case

What Peer Practitioners are not!

- **Counsellors**
- **Therapists**
- **Pseudo-psychologists**
- **Group Huggers**
- **Scented Candle users**

TRiM training - Aims and Objectives

To train key personnel **in:**

1. Psychological site management (inc Body handling)
2. Planning & filtering the event
3. Trauma Risk Assessment interview (3/7 & 1/12)
4. Psycho-educational briefings
5. Feedback to managers & facilitate referral if required

TRiM organisation

- Training Courses (2-5 days)
- Practitioners and Team Leaders
- Led by J1 (LE, SNCOs), support from medics
- 1 to 3 per Coy or similar sized unit

RN TRiM Study

Design

- A cluster randomized parallel group controlled trial
- First RCT like this in UK military populations
- 12 vessels (case(6) & control(6))
- Approx 200 persons per ship
- Baseline measurements (ATSS & interview)
- 12-18 months to ‘cook’
- Examining:
  - attitudes towards stress
  - occupational functioning
  - potential to “harm”

TRiM RCT Summary of Outcomes

Modest organisational benefit

- No sig effect on psych health or stigma
- Modest benefit to occupational functioning
- Evidence of benefit (psych health & stigma) in TRiM trained study
- TRiM qualitatively acceptable to personnel
- May be of more use in high- threat environment
- Favoured by commanders

What could you do to prevent it?

- Screening?
- Pre Deployment Briefings?
- Post Deployment Briefings?
- Peer group support (“TRIM”)?
- **Decompression?**
- Battlemind?

ACDMH

ACADEMIC CENTRE FOR DEFENCE MENTAL HEALTH

Decompression

ACDMH Team

KING'S COLLEGE LONDON

KING'S College LONDON

1829-2004

175th ANNIVERSARY

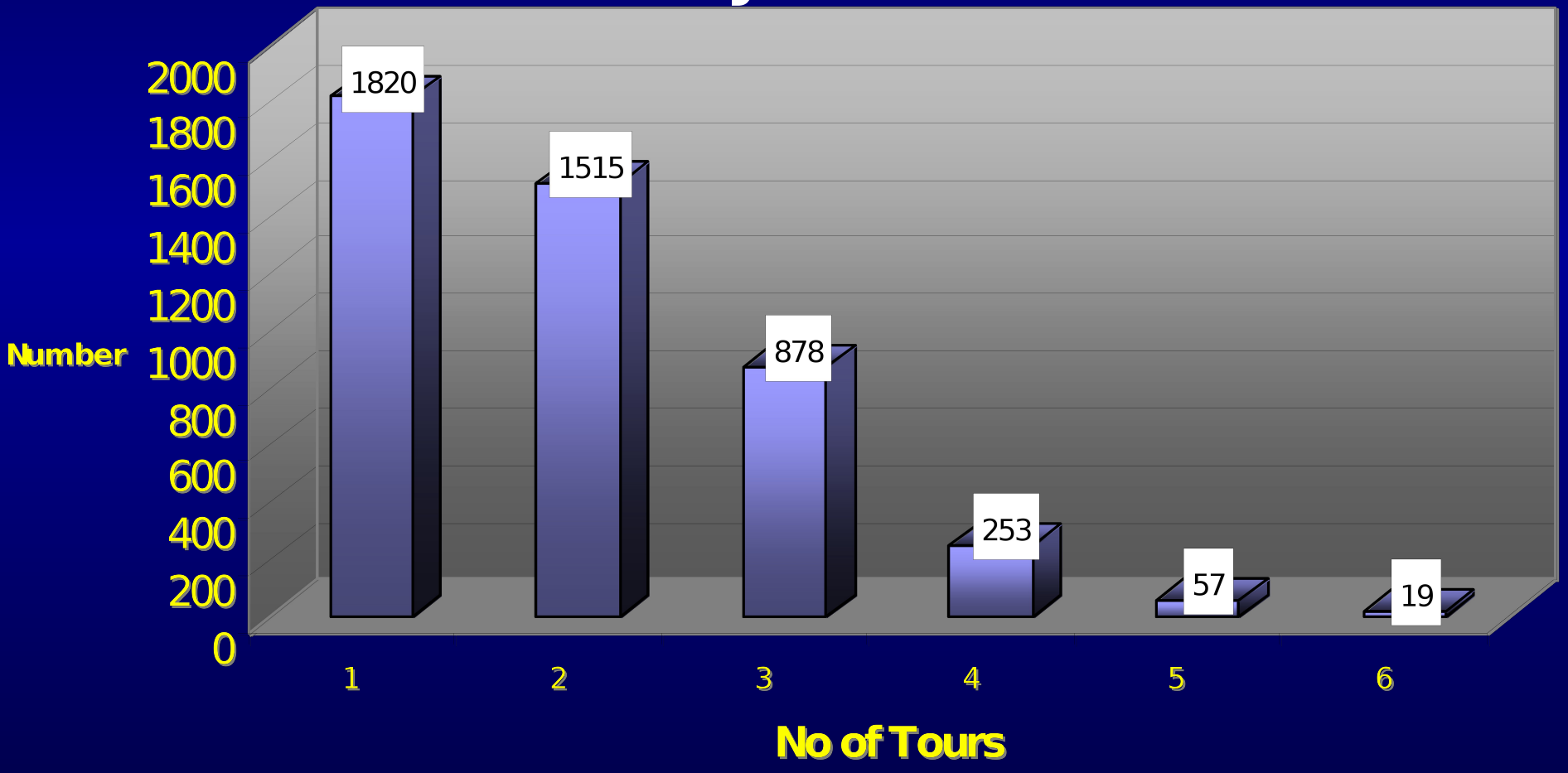
Decompression Process Overview

- **Those who fight together should unwind together**
- **Part of POSM**
- **UK AF TLD at Bloodhound Camp Cyprus (except: RN/IA/RAF)**
- **Now for all TELIC and HERRICK formed units**

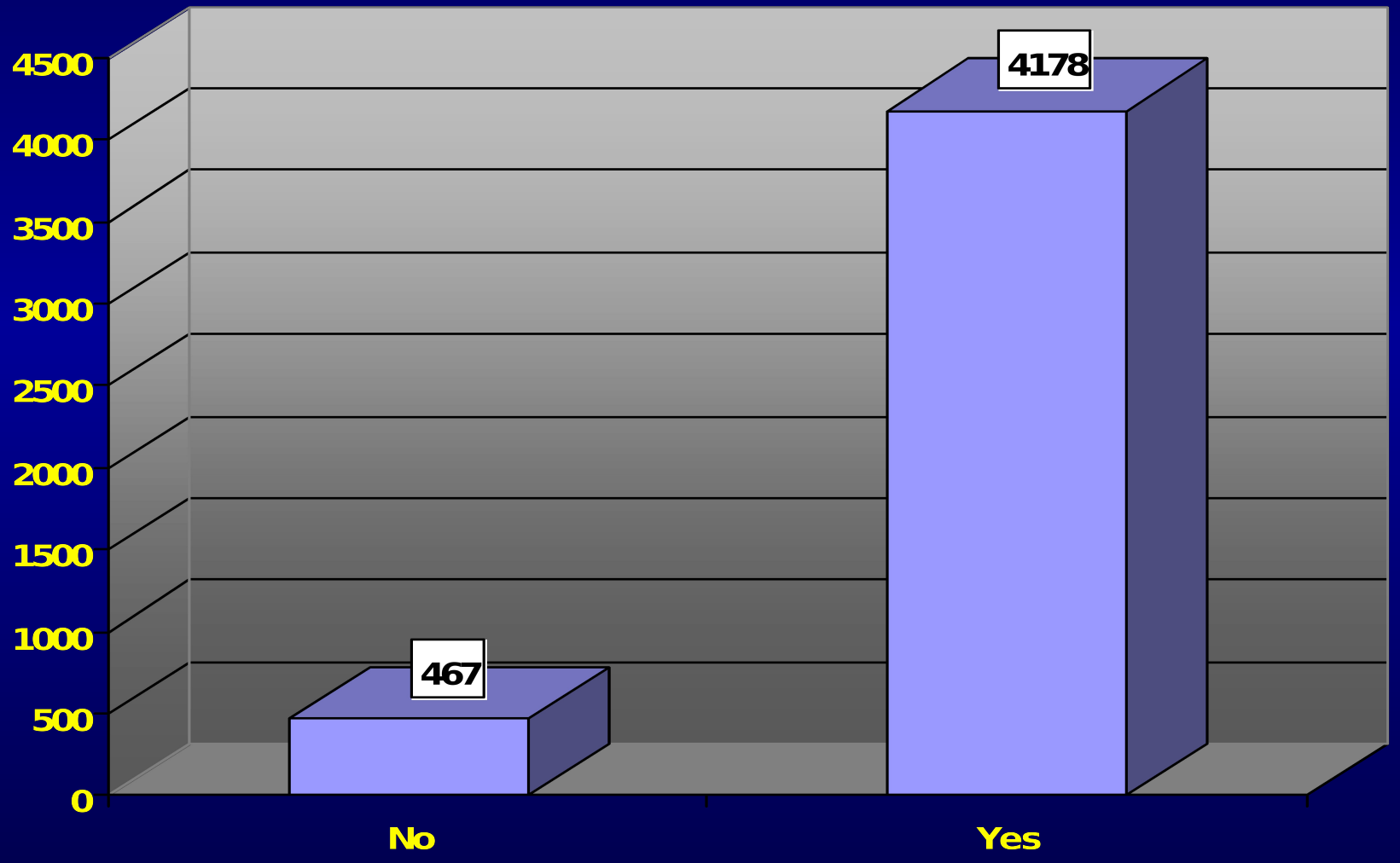
The ACDMH survey

- ACDMH currently surveys all TLD personnel
- Data presented here from ~4700 personnel from HERRICK & TELIC
- Questionnaire filled in at the end of decompression
- CAVEAT – this is preliminary data!

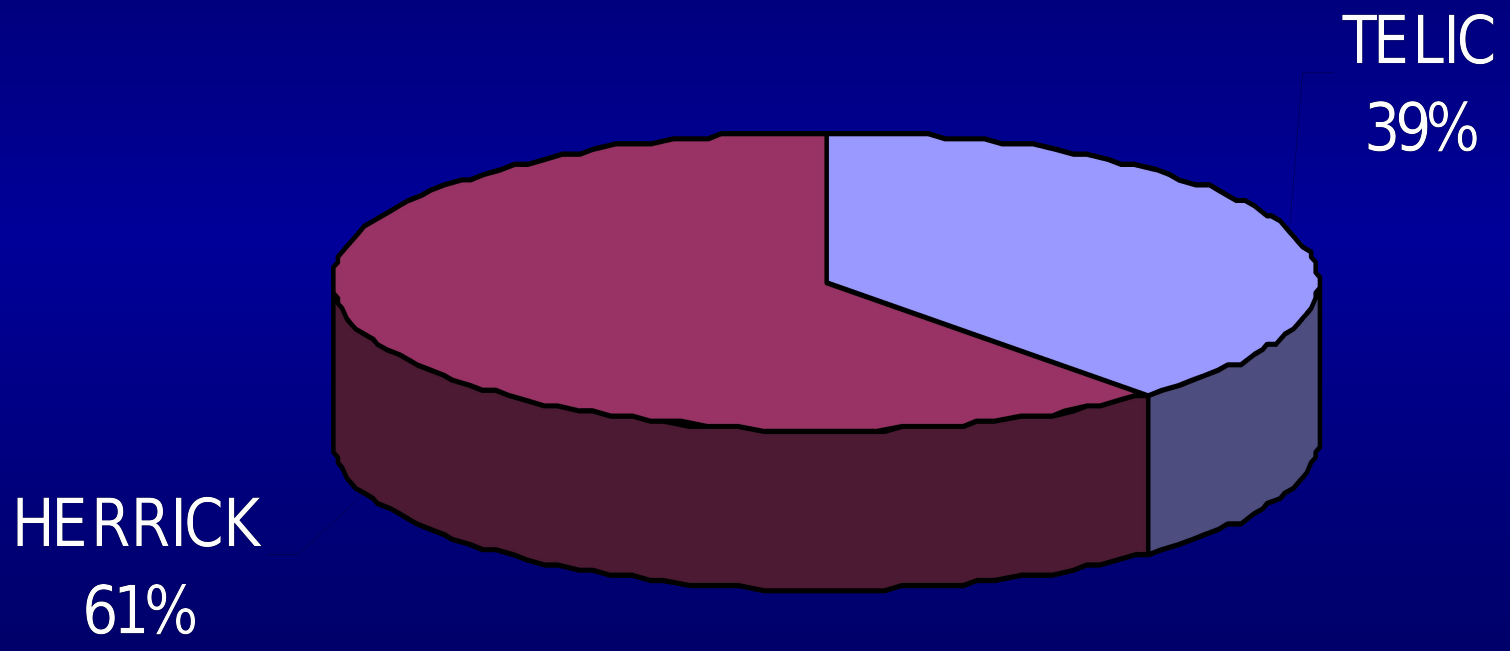
How many operational tours have you undertaken in the last five years?



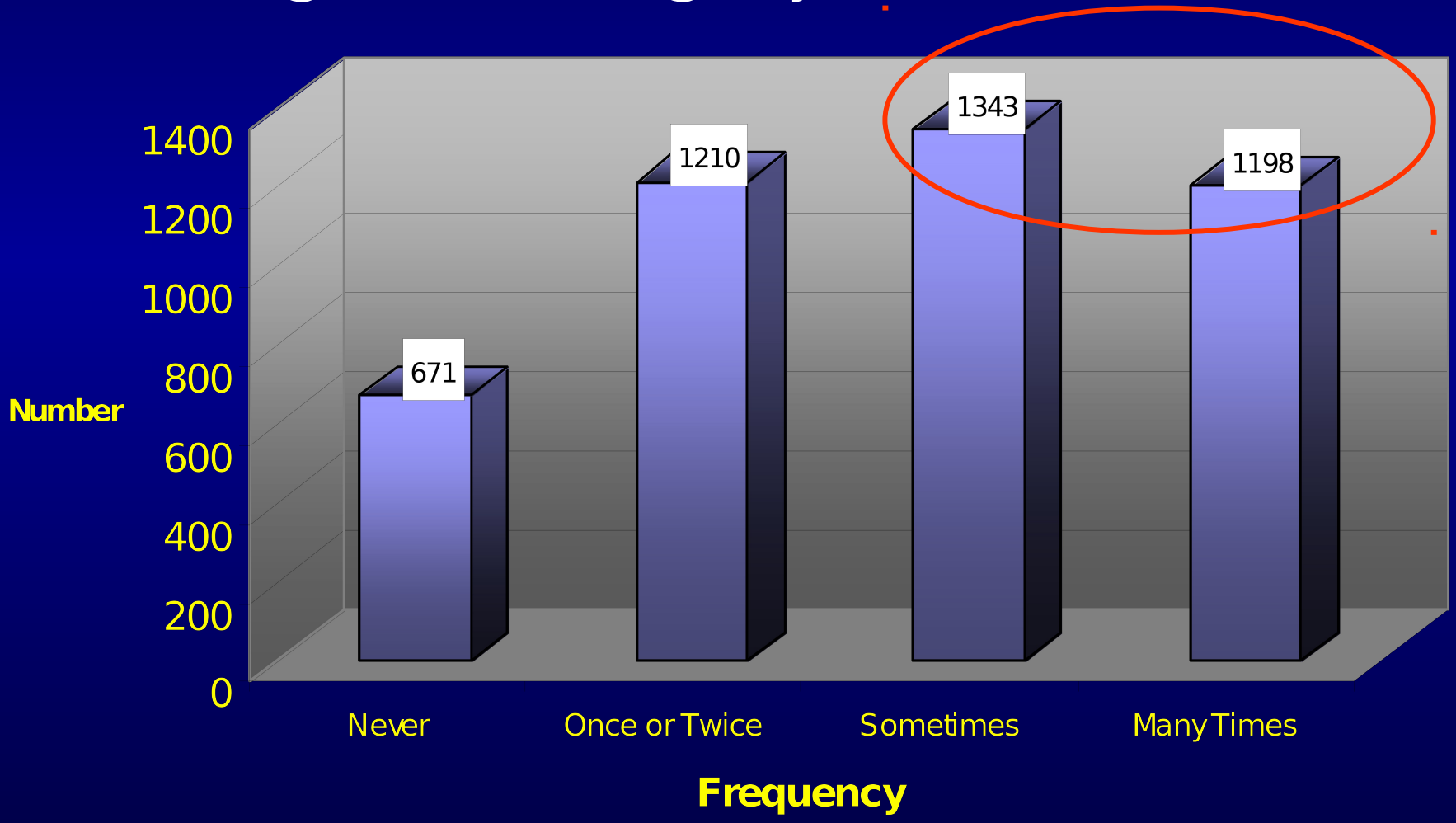
Is this your first decompression?



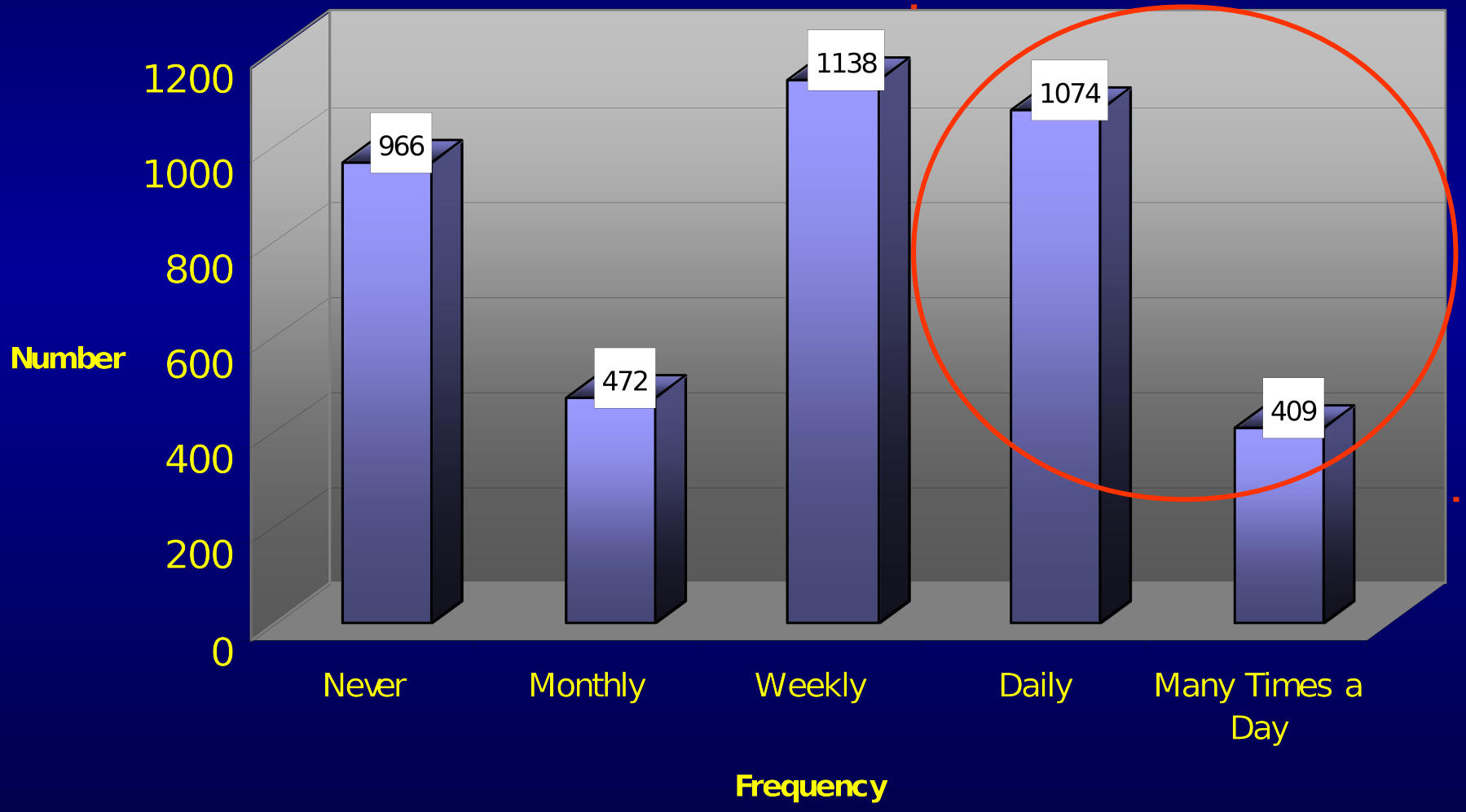
Which Operation?



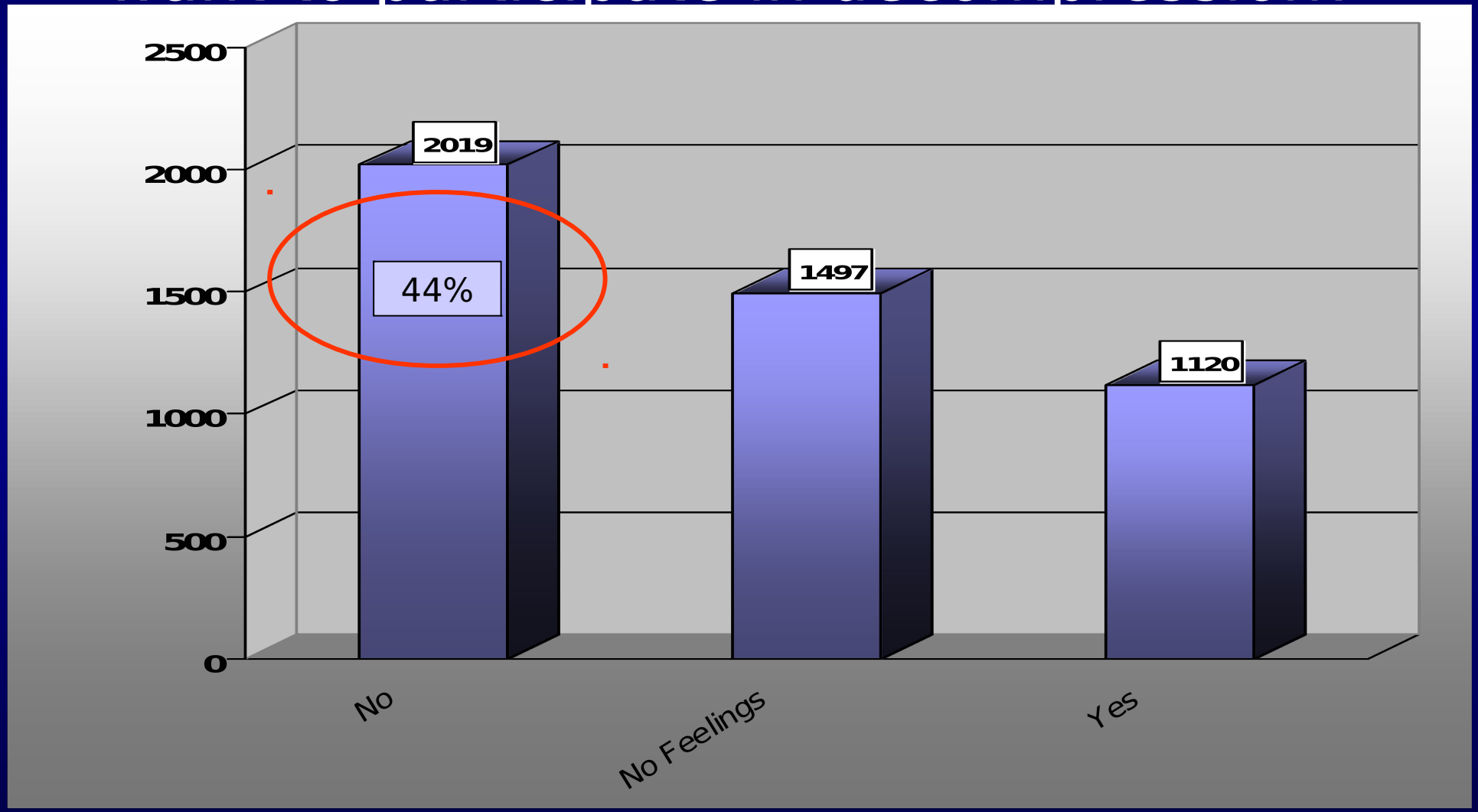
During this deployment, how often did you believe that you were in serious danger of being injured or killed?



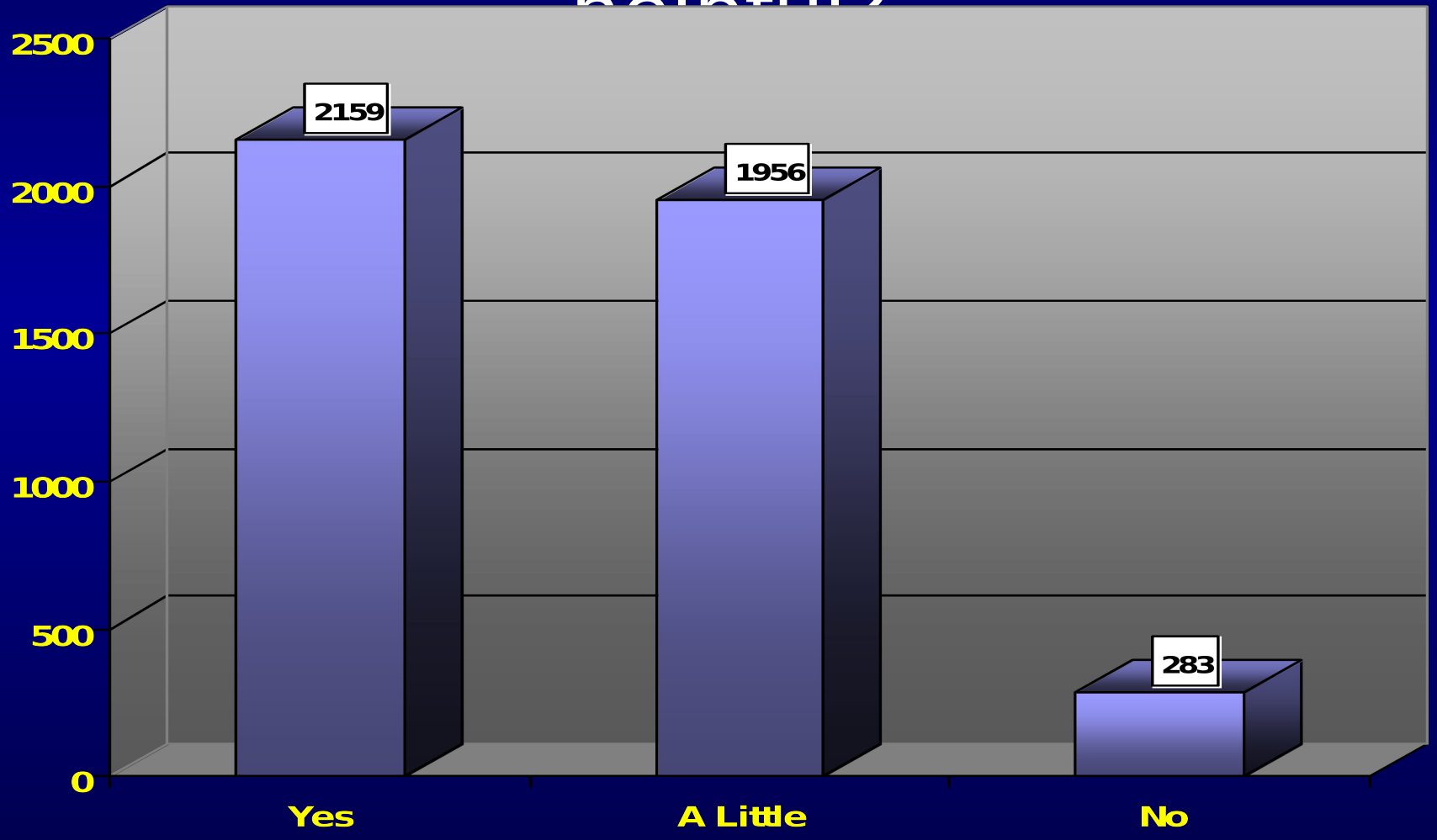
During this deployment, how frequently was your base attacked?



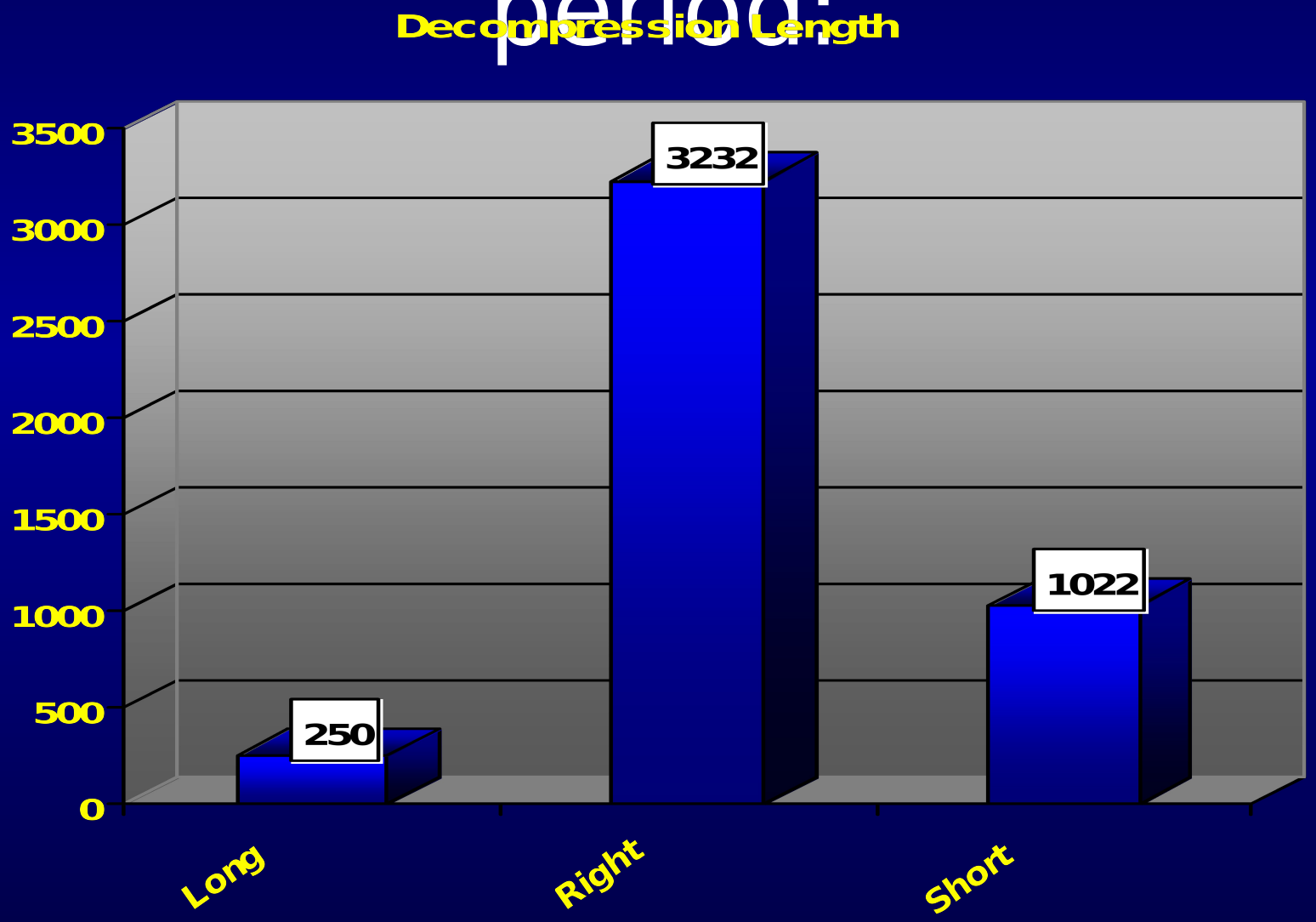
Before you arrived in Cyprus, did you want to participate in decompression?



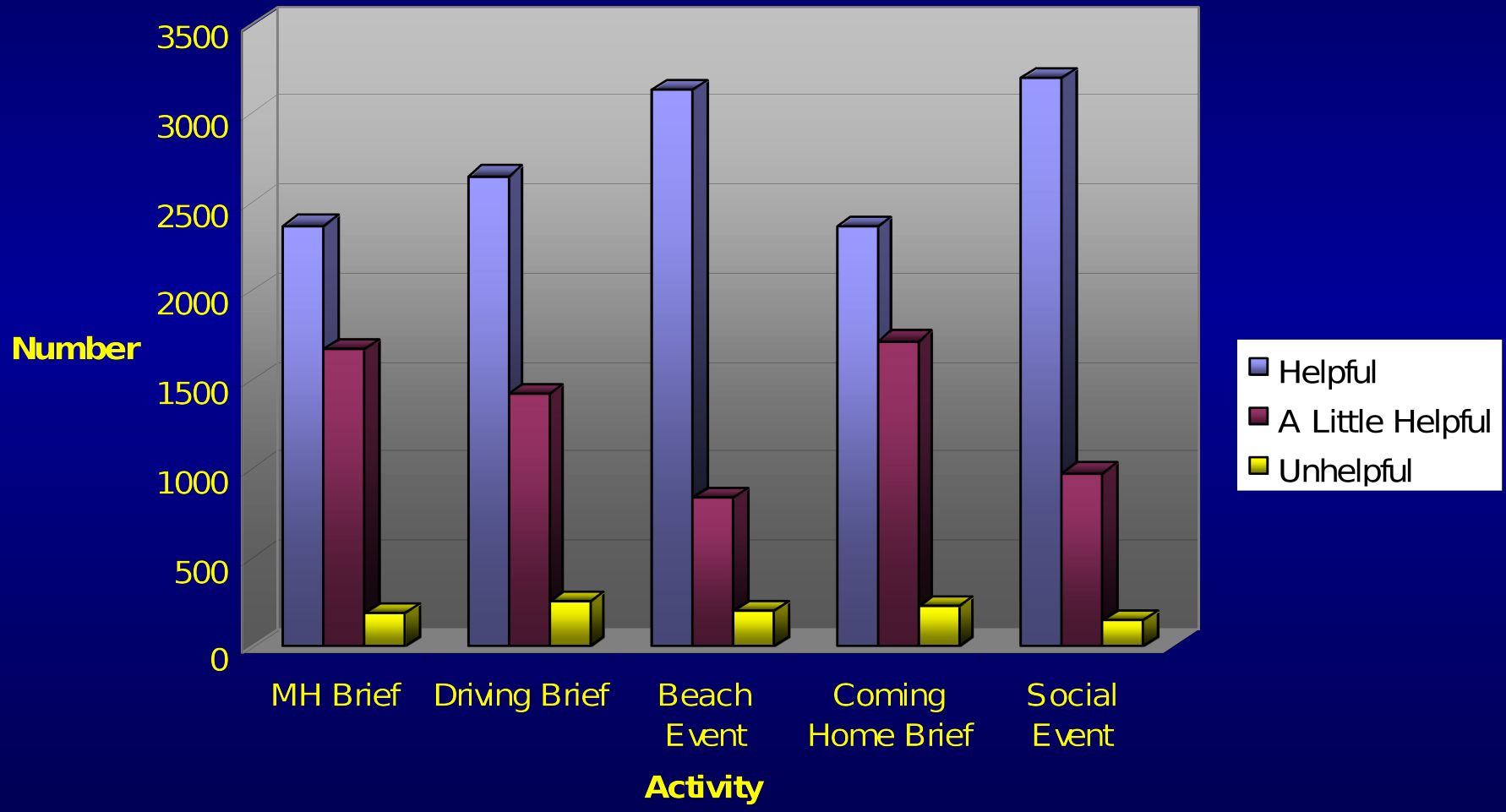
Having been through decompression, did you find it helpful?



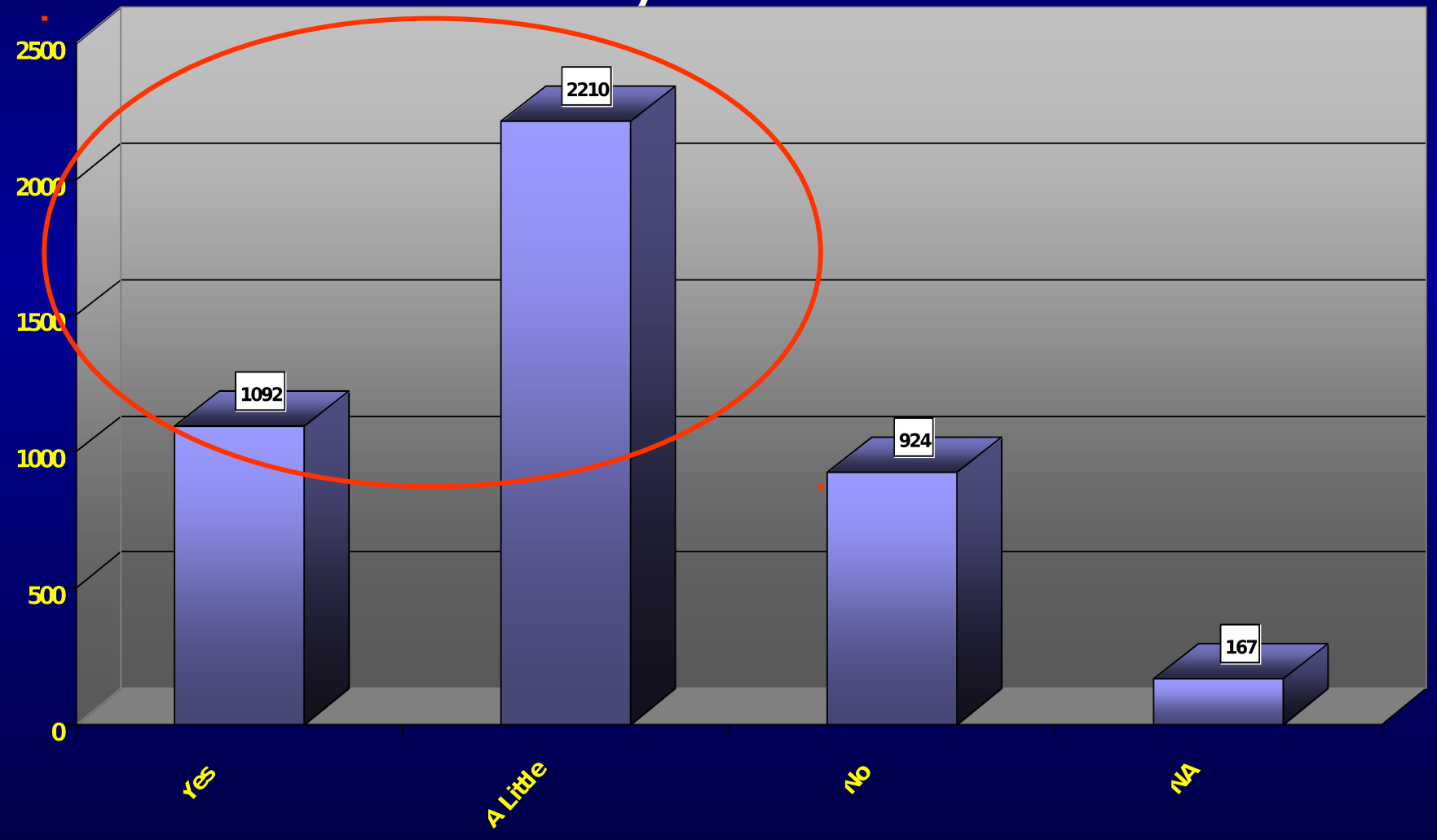
Was the decompression period:



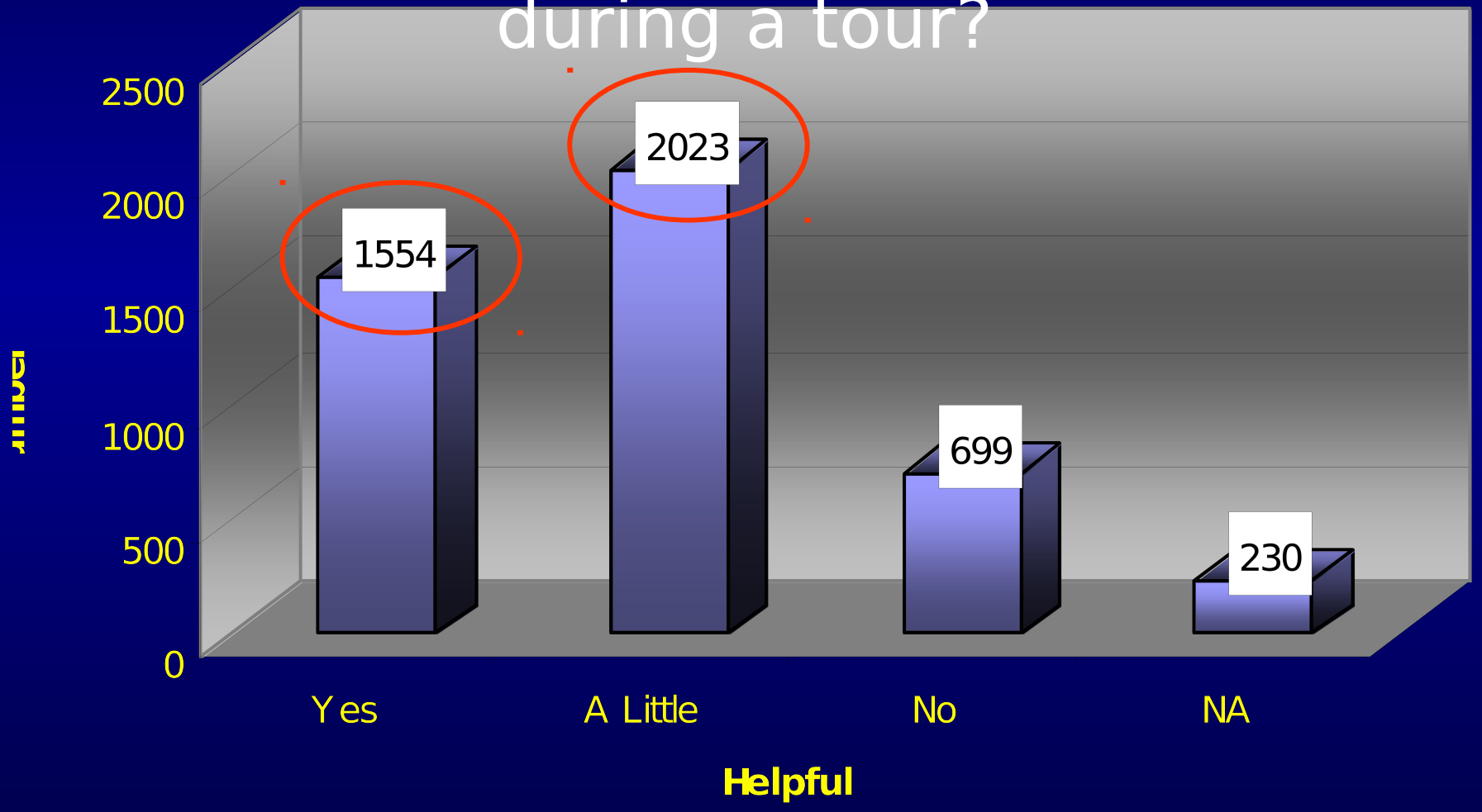
How helpful were the decompression activities?



Do you think that the decompression briefings will make going home easier for you?

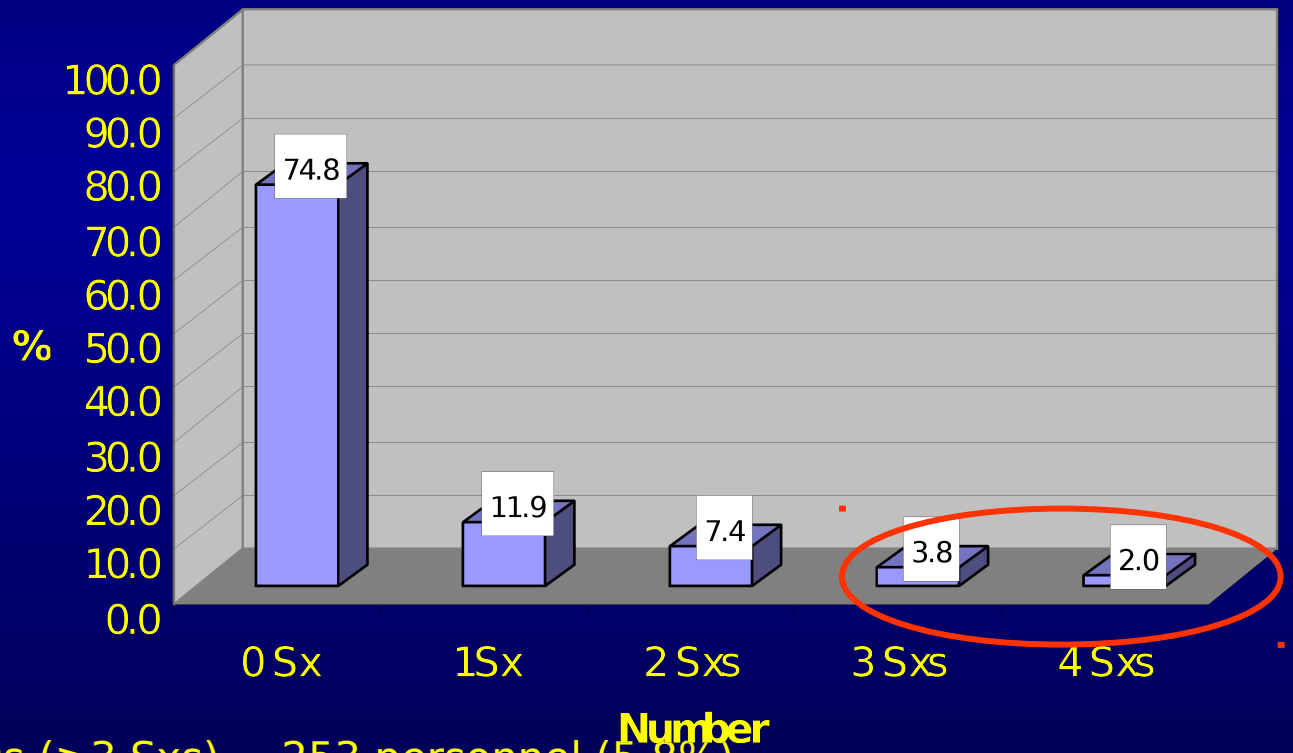


Do you think decompression has been helpful in letting you know how to deal with unpleasant incidents that occur during a tour?



Traumatic Distress Symptoms

(Nightmares, Avoidance, Arousal & Detachment)



PTS caseness (≥3 Sxs) = 253 personnel (5.8%)

Conclusion

- **Subjective evaluation of Decompression generally positive (inc briefs)**
- **~6% have significant early post trauma Sxs**
- **Longer term outcomes to be assessed by linking to KCMHR cohort**
- **Remains a "tool" for the commander's toolbox (c/w 6/12 to prepare, six months out in theatre)**

What could you do to prevent it?

- Pre deployment screening?
- Pre or post deployment psycho-education?
- Post deployment psycho-education?
- Peer group support (“TRIM”)?
- Decompression?
- **Battlemind?**

BATTLEMIND TRAINING

UK site: www.battlemind.co.uk

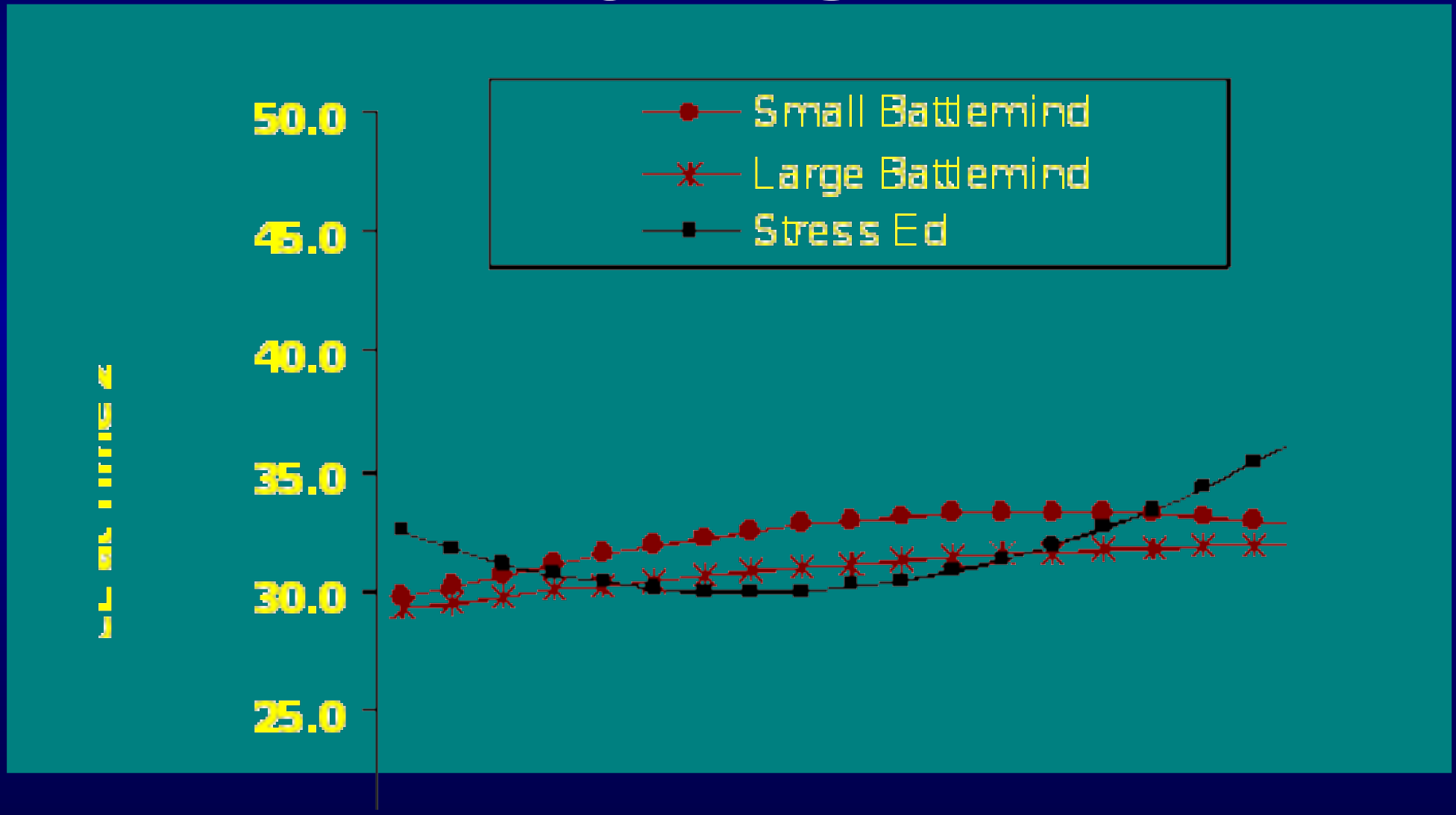
UK BATTLEMIND

- Training at post deployment phase
- Aims to manage operations to home transition
- Uses Service Person’s own experience positively
- Does not use an illness paradigm

Battlemind Deployment Skills

Deployment BATTLEMIND	**Home Front Problems**
Buddy Buddy System	Withdrawal
Accountability	Controlling at home
Targeted Aggression	General Aggression
Tactical Awareness	Being on Edge
Limited Alcohol	Lagered up
Emotional Control	Detachment & Numbness
Mission Operational Security (OPSEC)	Secretiveness
Individual Responsibility	Guilt
Non-Defensive (Combat) Driving	Aggressive Driving
Discipline and Ordering	Conflict with Friends & Family

US Battlemind: after 4 months



UK Battlemind Study

- Study Approved – 2nd UK Psych Cluster RCT
- US liaison, Anglicising Package, Roll out H9 RiP
- Will deliver anglicised Battlemind v “standard care”
- Follow up at four months
- Outcome “reduction in symptoms” rather than caseness

Risk taking behaviours among UK Armed Forces personnel

BMJ

RESEARCH

Mental health consequences of overstretch in the UK armed forces: first phase of a cohort study

Roberto J Rona, professor of public health,[1] Nicola T Fear, senior lecturer in military epidemiology,[2] Lisa Hull, study coordinator,[1] Neil Greenberg, senior lecturer in military psychiatry,[2] Mark Earnshaw, research fellow,[2] Matthew Hotopf, professor of general hospital psychiatry,[1] Simon Wessely, professor of epidemiology and liaison psychiatry[1]

Cigarette and alcohol use in the UK Armed Forces, and their association with combat exposures: a prospective study

Richard Hooper[a], Roberto J Rona[b], Margaret Jones[b], Nicola T Fear[c], Lisa Hull[b], Simon Wessely[b]

RESEARCH REPORT doi:10.1111/j.1360-0443.2007.01978.x

Patterns of drinking in the UK Armed Forces

Nicola T. Fear[1], Amy Iversen[2], Howard Meltzer[3], Lorna Workman[4], Lisa Hull[2], Neil Greenberg[2], Christopher Barker[5], Tess Browne[2], Mark Earnshaw[1], Oded Horn[2], Margaret Jones[2], Dominic Murphy[2], Roberto J. Rona[2], Matthew Hotopf[2] & Simon Wessely[2]

Academic Centre for Defence Mental Health, King's College London, London, UK,[1] King's Centre for Military Health Research, King's College London, London, UK,[2] Department of Health Sciences, University of Leicester, Leicester, UK,[3] King's College Hospital, London, UK[4] and Mental Health Hospital Unit, British Forces Germany Health Service, BFPO 40[5]

Risky Driving Among Regular Armed Forces Personnel from the United Kingdom

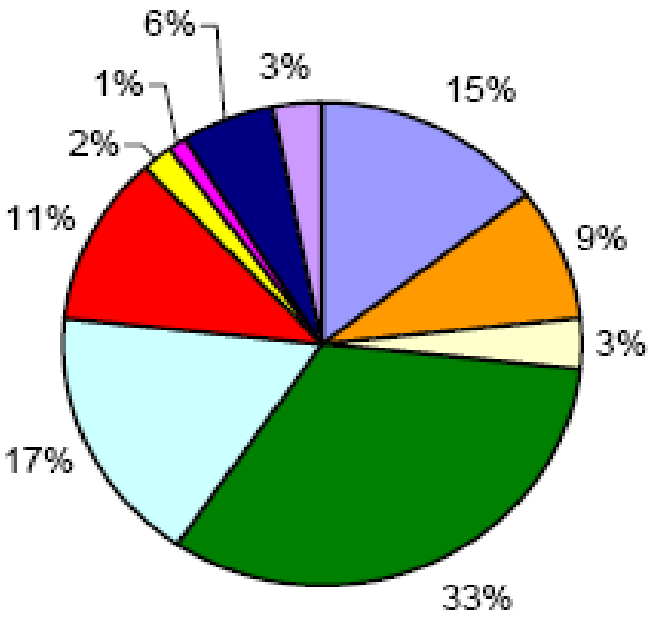
Nicola T. Fear, DPhil (OXON), Amy C. Iversen, MRCP, Amit Chatterjee, MBBS, Margaret Jones, BA (Hons), Neil Greenberg, MD, Lisa Hull, MSc, Roberto J. Rona, FFPH, Matthew Hotopf, PhD, Simon Wessely, F Med Sci

HOW DO EXPERIENCES IN IRAQ AFFECT ALCOHOL USE AMONGST MALE UK ARMED FORCES PERSONNEL?

Tess Browne[1], Amy Iversen[1], Lisa Hull[1], Lorna Workman[2], Christopher Barker[3], Oded Horn[1], Margaret Jones[1], Dominic Murphy[1], Neil Greenberg[4], Roberto Rona[1], Matthew Hotopf[1], Simon Wessely[1], Nicola T Fear[4]*

Why study risky driving?

Figure 3: UK regular Armed Forces: Causes of death, 2005



Prevalence of risky driving

Behaviour	n	%
Risky driving	**1,504**	**18.5%**
- Not wearing seat belt	**498**	**6.1%**
- Speeding in built up area	**406**	**5.0%**
- Speeding on motorway	**1,093**	**13.4%**

Prevalence of risky driving

Behaviour	Military (%)	General population (%)
Not wearing seat belt	**6.1%**	**6%**
Speeding on motorway	**13.4%**	**10%**

Who are “risky drivers”?

- **Not in a relationship**
  (24% vs. 17% for married/cohabiting)
- **Young age (<35 years)**
  (27% vs. 9% for 35+)
- **Being male**
  (20% vs. 10% for females)
- **Pre-enlistment vulnerability (2+ factors)**
  (22% vs. 10% for <2 factors)
- **Being in the Army**
  (23% vs. 15% Naval Service vs. 8% RAF)

Why study risky driving?

The Observer, July 20 2008
British soldiers are twice as likely as civilians to die as a result of reckless driving, **because they have difficulty adjusting to normal life after returning home from active duty**, according to official statistics.

Deployment and “risky driving”

- **Being deployed to Iraq (on TELIC 1) (22% vs. 15% for non-TELIC)**

→ Hangover of behaviours

- **Exposure to traumatic events (dose-response relationship: 14%, 25%, 33%)**

→ Invincible

What is being done?

Ads warn soldiers back from war zones against reckless driving

The Observer

“You're Tough, But You're Not Invinc

Risky Driving

- Grim Reaper DVD series
- ‘Dark’ humour
- Reinforced by radio messages, adverts
- Too early to tell….but there may be a decrease in RTAs!

KCMHR Directors : Prof Simon Wessely (IOP), Prof Chris Dandeker (War Studies)

TELIC Project Co ordinator Ms Lisa Hull

Epidemiology: Professor Matthew Hotopf , Dr Nicola Fear, Charlotte Woodhead

History & MSc Course; Professor Edgar Jones

Immunology: Professor Mark Peakman

Neuropsychiatry: Prof Tony David, Dr Simon Fleminger

Military Advisors: Surgeon Commander Neil Greenberg (RN); Major Norman Jones

Battlemind: Dr Kathleen Mulligan, Helen Alvarez

Psychiatry: Dr Amy Iversen

Public Health: Professor Roberto Rona

Qualitative Research: Dr Stephani Hatch

KCMHR
THE KING'S CENTRE FOR MILITARY HEALTH RESEARCH

ACDMH
ACADEMIC CENTRE FOR DEFENCE MENTAL HEALTH

Any Questions?- Fire Away!

Neil: sososanta@aol.com